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This document records the proceedings of the Second National Conference of the U. S. Office of Education Tri-University Project in Elementary Education, the theme of which was "Reason and Change in Elementary Education." Included are a copy of the conference program, an introduction by Paul A. Olson, conference papers accompanied by critiques and records of group discussions, and "Final Responses from the Floor." Papers presented include: "Charting Our Position on the Way to - - -" by R. Freeman Butts, critique by Charles Burgess; "A Child's-Eye View of Knowing" by Eleanor Duckworth, critique by John Flavell; "The Role of Language in Learning in the Elementary School" by James Britton, critique by William Iverson; "The Rhetoric and Reality of Educational Change" by Vernon Haubrich, critique by Martin Garrison; "Education for Stupidity (Toward a Sociology of Ignorance)" by Jules Henry, critique by Fred Gearing; " A Portmanteau Proposal" by Jerrold R. Zacharias, critique by Raymond English; and "New Directions in Elementary Education" by Arthur Singer. Appended are "Response to Jules Henry's 'Education for Stupidity'" by Phillip Bacon; "Social Groups and Their Languages" by Nancy Modiano; "Language and the Recruitment of Teachers: Implications of the Papers by Duckworth, Britton, and Henry for Recruitment and Preparation of Elementary Teachers" by Richard L. Larson; "Postscript on Change" by Robert Ince. (SG)

ED 024618

REASON AND CHANGE
IN
ELEMENTARY EDUCATION

Second National Conference
The U. S. Office of Education Tri-University Project in Elementary Education
February 1-3, 1968
New Orleans, Louisiana

SP001801

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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REASON AND CHANGE

IN

ELEMENTARY EDUCATION

The U. S. Office of Education Tri-University Project
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NATIONAL CONFERENCE ON ELEMENTARY EDUCATION
New Orleans, Louisiana, February 1-3, 1968
Gene Hardy, Conference Co-ordinator

Thursday evening, February 1:

Chairman: Phillip Bacon, Co-Director, University of Washington segment of the Tri-University Project
8:00 p.m. Freeman Butts
9:00 p.m. Charles O. Burgess, Respondent

Friday, February 2:

Chairman: Nancy Modiano, New York University segment of the Tri-University Project
9:00 a.m. Eleanor Duckworth
10:00 a.m. Group Sessions

Chairman: William Work, Executive Secretary, Speech Association of America
11:00 a.m. James Britton
12:00 noon Group Sessions

Chairman: George Manolakes, Director of New York University segment of Tri-University Project
2:40 p.m. Plenary Session: The Classroom and Reasonable Change
John Flavell and William Iverson, Respondents

Chairman: Richard E. Lawrence, Associate Executive Secretary, American Association of Colleges for Teacher Education
7:00 p.m. Vernon Haubrich
8:00 p.m. Group Sessions

Saturday, February 3:

Chairman: John Jarolimek, Co-Director, University of Washington segment of Tri-University Project
9:00 a.m. Jules Henry
10:00 a.m. Group Sessions
11:20 a.m. Plenary Session: Society and Reasonable Change

Chairman: Hugh Rudorf, University of Nebraska segment of Tri-University Project
2:30 p.m. Arthur Singer
3:30 p.m. Jerrold Zacharias' paper (discussion)
4:10 p.m. Plenary Session and Open Discussion
Raymond English, Respondent

WRITERS

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William Ward, Northwest Regional Educational Laboratory

Miriam Wilt, Temple University

William Work, Speech Association of America

REASON AND CHANGE IN ELEMENTARY EDUCATION

Paul A. Olson, Editor
The University of Nebraska

The New Orleans Conference of the Tri-University Project was held February 1-3, 1968. Its theme was "Reason and Change in Elementary Education." The purposes of the Tri-University Project are described in the report of the first conference of the Project held in Denver (The Craft of Teaching and the Schooling of Teachers) particularly in Mr. Bigelow's speech setting forth his, and the Office of Education's hopes for it and in remarks of Project participants and staff which suggest where individuals saw the Project as going. In brief the Project is an effort to improve the quality of the training offered to America's elementary teachers by bringing together for a year of study, research, and discussion some of the best of the people from the disciplines or the educational disciplines who train elementary teachers in institutions of Higher Education. The hope is that, when they return to their own institutions, they will make them better places at which elementary teachers may receive training. The Denver Conference was intended to set the stage for a dialogue among the three universities represented in the Tri-University Project as to where Elementary Education ought to be going in the social sciences (Washington), the behavioral sciences (New York University) and English (Nebraska): a dialogue as to what in these areas may inform what happens in the classroom or what may be taught there. This is not the place to summarize the proceedings of that first conference except to observe that what was said in New Orleans was in many cases a natural follow-up to what was said at Denver. The speakers at New Orleans had read the report of the Denver conference. They were frequently developing, or replying to, points made there.

The New Orleans conference was conceived of as an effort to move the dialogue over what is happening, and what ought to happen, in elementary schools in America from the level of the project to the national level. The Tri-University Project planned the conference (actually its structure was suggested by the University of Washington branch of the Project), and the Project invited the speakers and respondents (many of them were suggested by the Washington and NYU staff). We wished to discuss history (Butts), what goes on inside of and outside elementary classrooms (Duckworth, Britton, Haubrich, Henry), and future plans (Zacharias, Singer) as these bore on our theme. The Project did not conceive of the conference as an effort to promote itself or "announce its plans." We do not yet have a clear set of programs or plans for training teachers. We are thrashing about. Our "program" is only gradually being developed in discussions at the three campuses, embodied by its participants as they gain knowledge or change attitude. "New Orleans" sought rather to invite national discussion concerning what reasonable kinds of change could be envisaged within classrooms or outside to make the education of kids a better thing.

"Reason" was the conservative term in the New Orleans theme--the planners of the conference did not wish to suggest that they regarded all change, even all deliberately engineered change, as reasonable. Part of the sickness of our schools may be that they have changed too rapidly in non-essential ways--curricula surfaces, new media, new books, new gimmicks; one of the characteristics of "healthy" as opposed to unhealthy societies--according to a UNESCO report on "Tensions and Technology"--is that change is slow and continuity is sustained by customs, traditions, attitudes.[1] Change is certainly necessary, given the number of children with which present schools fail, but the difficulty may be that we have had very little "organic" change in the schools, reflective of developments in the American social structure in the urban areas and in the character of kids, 9-13; and we may not have assimilated the meaning of the changes in schools made, or suggested, for the years 3-5, for the years which follow. Certainly little change has asked that a child be responsible, or cognizant of the difficulties, the terrors even, which our society faces. The idea of "changing things" is the piddliest of educational clichés, we educators--all of us--being as happy to represent ourselves as making everything new (when nothing may be really new) as medieval historical writers and poets were to represent everything as the same as they were at the time of Augustus and Christ, no matter how they had really changed since. Significant social change will always probably be "what we do not see" as it happens; such change as Freeman Butts represents in his essay describing how education and culture become separated with the advent of city civilization, and education and belief, with the development of scientific, technocratic civilization, was not seen very clearly when it happened; at least the latter sort of change was not seen clearly when it occurred in seventeenth century England (cf. Butts, Duckworth, passim). We may be coming to a time when the distinction between culture and education or between belief and education will be destroyed in a rootless technological culture so that education and culture will have both been subsumed by "technology." But we probably will not feel the change until it has taken place.

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[1] J. S. Scott and R. L. Lynton, The Community Factor in Modern Technology (UNESCO, 1952), p. 15.

What is reasonable, now as always, is that we should spread through education Matthew Arnold's "sweetness and light"--or, if not his, somebody else's, perhaps J. Dover Wilson's or Jimmy Britton's. "Elementary Education"--the child's first initiation in a learning which he does not accidentally pick up has pretty consistently for the last thirty, perhaps the last hundred, years, been conceived of as the formal social agent which will destroy social evil and create some sort of individual sweetness and light. We may not know what this agency's powers are or its weapons (we don't even know what we want it to be); but we have the faith that it can do something about what is wrong with the social order so that the next generation will not suffer our diseases. New Orleans may be regarded as one of a great many efforts--sprawling and amorphous--to discover Elementary Education's powers and give it weapons. In our more ironic moments, we may be inclined to view New Orleans' look at elementary education as a farmer from Iowa viewed Michelangelo's David when he came to the galleries of the Academy in Florence. He looked at the David for a moment down the long corridor of stone slaves leading up to it. Leaving his wife and daughter behind, he proceeded down the corridor, circled the statue twice, his tongue in the side of his mouth as he took a close-up look at the figure of youth and beauty and spiritual power ready to slay the monster of evil and unbelief. And, as he walked slowly back to his wife down the corridor, he observed loudly, "Don't like it, tain't natural, too big." The look of elementary education in New Orleans was probably unlovely in many ways: overly full of promises to slay monsters, unnaturally committed to specialized jargons, too big in all kinds of ways (too many people, too many speeches, too many disciplines represented, too big an area of concern).

The bigness and amorphousness of the college area included in the discussions is certainly captured by Eleanor McMahon's remark after Miss Duckworth's speech:

> What I have summarized /from her group's discussion of Duckworth/ points out one of the real difficulties in our educational program: that we have an essentially eclectic notion of elementary education. If there's one thing that our notion of elementary education is not, it is "elementary." I don't believe that the A.M.A. would have a conference on "What is Medicine?" or the A.L.A. on "What is Law?" but, you know, we're sort of having a conference on "What is

> Elementary Education?" which is really a broader field than either of those.

The amorphousness of the school area which was under consideration is captured in William Iverson's remarks:

> Especially do we need to be sensitive to the growing linguistic power of children and its changing character as we contemplate the lengthening elementary school program; we do have increasingly more "pre-school" activities. I include them under the rubric of the "lengthening elementary school program" here. Whether you wish to consider them part of elementary education or not is for you to decide; for me these years are a part of elementary school.

We not only are not certain what should be studied by the teacher who plans to know enough to teach in an elementary school; we don't even know where the schools begin and end. Colleges and universities have a great variety of kinds of departments or divisions which regard "elementary education" as their special competency, and these departments in turn look to a variety of other departments in the so-called "disciplines" as their feeders; neither group is very clear about what range of competencies it should possess to slay the monster--or to produce teachers who can slay it. Moreover, no one is accountable for the creation of a bad teacher. Perhaps the more important amorphousness of elementary education resides in the new kinds of structure in the elementary school which we have experienced in recent years as Head Start adds stairs to the beginning of Elementary Education, as projects to develop the "middle school" (or the departmentalized primary) change some people's conceptions of the middle stairs, or as the "infant school" tradition imported from England challenges the very raison d' être of stairs.[2] The gradual correlation of the emergence of "stairs" in the schools--the coordination of room, "school level," subject to be studied, and age--as "childhood" is invented in the Western world and curtained off from the conceptual schema of adult society and as the nuclear family develops is brilliantly described in Philippe Ariès, L 'Enfant Et La Vie Familiale Sous L'

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[2] The members of the conference were given, in connection with Mr. Zacharias' speech and at his request, Edward Yeomans' Education for Initiative and Responsibility (National Association of Independent Schools, 1967).

Ancien Régime.[3] Since the book suggests what social historical forces created the "stair-step" school, it may also suggest by implication what forces could undermine it and ought to be taken into account in the developing of new school formats: family pattern, relationships between ages, play patterns, conceptions of the relationships between adulthood and childhood. Since many agencies and kinds of agencies are involved in the education of children and the funding of their education, no one is really accountable if we fail with the kid, if he cannot read in grade 9 at age 16 but can learn gradually under the pressure of a job at age 17 or 25. One is not concerned about the number of agencies involved in the education of children or the diversity of elementary school formats; one is concerned that the formats so often are not adjusted to the kids on which they are tried and no one teacher or administrator held responsible when a format fails. And no agency fails either when a child fails.

One cannot say in a global way that New Orleans defined "what Elementary Education is" or "where Elementary Education should reasonably move"; one can say what it said about the reasonable in a series of isolated, though possibly related, propositions:

1. It would be reasonable if administrators in education as bureaucrats--forgetting about the gates which they can keep and close--looked more intently to their roles as leaders and nurturers of children (Haubrich, Zacharias).

2. It would make sense to give teachers and all educational personnel much of their training--preservice and inservice, in the disciplines and in education--on the site and in the situations where they actually teach: to make the training of whole hierarchies of school personnel one of our objectives and the unifying of preservice and inservice training another (Haubrich).

3. It would be reasonable for textbook writers and writers of all kinds of materials for kids to "tell it like it is" instead of as our "grids" and clichés, confusing the is with the ought, tell us they are (Henry, Duckworth, Davis).

4. It would be reasonable, as we evaluate the educational process, to watch more things than what kids learn about things: to

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[3] Librarie Plon, Paris, 1960; translated as Centuries of Childhood: see, especially, part two.

watch how they joy in what they do, or how they organize themselves into groups, or relate themselves to the adult community, or learn to think well of their own powers (Duckworth, Singer).

5. It would make sense to let kids talk a bit at school and make their own sense of experience in group talk and individual use of language (Britton).

6. " " " " to create curricula which answer to the interests of children from all of America's groups if children are to study "curricula" at all (Singer).

("The most critical limitation of the curriculum reform movement so far has been its use of leading school systems for developmental purposes and the resulting concentration on the middle-class, college-bound student population. The movement can so far claim no successes among the underprivileged, nor among those students whose specific talents will not see them through higher academic education" Arthur Singer.)

7. It would be reasonable and right, perhaps it is necessary, that we make education become a branchy tree which permits climbers to move easily from branch to branch as they choose their first careers, learn more, choose new careers, etc. (Zacharias).

Freeman Butts, in his remarks, suggested that the conference had not faced the deeper policy matters which were posed by the situation in education today as it may be seen in the light of history and in the light of remarks such as Mr. Henry's. He was probably right. I should like to suggest in the remarks which follow one sense in which the conference may be seen as having implications for the creation of a policy which might take account of the problems which Mr. Butts' look at history posed.

Instead of elaborating the propositions which I stated above (they are elaborated in the speeches themselves), I would like to work indirectly and offer a picture of some of the more intimate circumstances in which the education of the young in this nation finds itself. I believe that I derive this picture from the New Orleans conversations. The picture may suggest implications related to the theme of the conference. When Freeman Butts, in his address, spoke of the ecumenicizing process by which modern civilization--a rootless, technological thing--becomes world-wide, he was speaking of the process by which roughly similar kinds of technologies and industries, supported by similar kinds of training in science and technology, have developed about the world, creating roughly similar patterns of clothing and housing and parallel economic pressures. In this ecumenicized civilization, the communications media can make available to the "new class" a fairly standardized pool of information, can take the resources of any traditional closed pattern of life and apparently "make them available" almost instantaneously to any portion of the world (Maharishi Mahesh Yogi and Donovan Leitsch may be good symbols of the process). I say "apparently." For everything of importance in the old is radically transformed as it is "made available" to the "ecumenical" (even as an ecumenical Roman Catholicism is radically transformed as it, fusing its narratives with traditional myth cycles, made its way into the hinterlands and slums of South America).

Consider Butt's picture of the problem facing education and the country:

> I am convinced that the two overriding problems facing the United States today are: (1) How to create and learn to live in decent urban centers; and (2) How to create and live in a decent world civilization. And the two problems are closely related, for urbanization and the urban way of life are now encircling the globe. Not only does the world-wide urban revolution pose enormous threats to human dignity and serious danger to peace and security, but it also holds out great hope. Today the educational elite of the world's cities are beginning to form what Kenneth Boulding calls an "invisible college" of persons devoted to bringing into existence and spreading a world culture.

The picture of a great invisible college of educated men encircling the globe, men looking for objectifiable evidence in trying to learn to "tell it like it is," men dedicated to the use for social betterment of whatever conceptual schema allow one to see coherence and regularity in the natural and social order, is an attractive one. The picture gains a certain immediate plausibility in the proposals of Superintendent Donald G. Emery of Scarsdale, New York, who would have the suburban school districts of the country connected by rapid transit systems with the inner-city so that each could take up to a 20% proportion of inner-city students, providing to these students the benefits of the "invisible college," widening their intellectual horizons, making them think better of themselves, etc.

But I fear that I do not have much hope for the invisible college as it presently is, and its members do not readily change. We who are its members are as myth-bound, using myth in a pejorative sense, as any savages. We are the men who have fled from the cities to escape the poor, the undereducated, the drugged and the drunk but, most of all, the black: "those who don't keep their yards neat." We have fled to keep our children from having to go to school with the children of the men and women whom our grandfathers had enslaved and taught the power of fire, the knife, and the twist of the arm; we have fled to keep our kids away from the kids of those poor people whom we as a class have not had insight or compassion to train. As administrators and supervisors, we tend to stand at the bureaucratic gate to keep it strait--at least for the kids who don't come from our college--providing for them "death at an early age," or deadly boredom. We write, for kids who do not come from our college and for kids generally, textbook fairy tales about "the way things are," which have a happy ending in the palace of *Democracy* from which such creatures as "Racism," "International-Oppression," "Not-Allowing-Everybody-a-Fair-Chance," and "Not-Allowing-Everybody-a-Real-Chance-to-Influence-Decisions-about-the-Social-Order" have been exiled to mythical Siberian caves. As parents and school officials, we have passed the double-edged school attendance laws and abused the power which they give schools to control people outside the power groups which control Boards of Education without responding to pressures from those people. And even in our more enlightened moments, we have worked for EDC or for the various federal curriculum development projects and written curricula which do not get through to ghetto children. We have either fled or failed. There is no policy or plan--no engaged idealism at work sufficiently broadly in our society--to keep us from doing it again. Mr. Butts did not say we would not fail again; he said we must not.

But we may.

If one looks at our invisible college, one can see why we may fail again. At one level--the level at which this college lives when it goes to work--it is a college of the liberated and rational; at another, it is no more a college than the groups around the world it would purport to teach. It is a group of little fragmented families, tribes, and clans: men pitiable, weak, afraid of the powerful technology which they operate, men who represent remnants of older societies lost and forgotten, telling--like the Amahuaca--myths that half make sense and half do not because their meaning has been forgotten, performing rituals of hate and love to exorcise imaginary enemies /Negroes, Communists, Black Men, Yellow Men, Hippies, and Birchers/; men who are in spirit like the temple which Hans Castorp sees in a dream and which represents the spirit of his two teachers, Settembrini-the-rationalist and Naphta-the-mystic-Facist, a temple covered on the outside with statues which represent the dignity and rationality of men and containing within real-life cultists who preside over an ancient rite involving the eating of human blood. Not *animal rationale* but *animal symbolicum.* Our richness and our misery is that we are still very "primitive" in many ways. We do not have the sense of community or the capacity to give training for social responsibility of many "coherent" preliterate communities, and our suburban "college" is not so much a collegium as a place where the sense of community dies and where we, again like the Amahuaca, know a few friends scattered in the "woods" of look-alike houses while the system takes care of the fearful rest and keeps their lawns cut.

My squint-eye picture of white suburbia has something to do with present problems in education and the education of teachers. The community does not automatically provide all of the education which a child in our society needs; yet, education cannot be done as apart from a creation in the child of a sense that it belongs to a community of some sort, I suspect: a community to which it can contribute and for whose common profit it can live. And the pressure of education does not necessarily develop the sense of natural community in a group; the "beliefs" about the physical universe created by physical scientists who have worked in certain characteristic ways, at least since the time of Bishop Wilkins and his Royal Society, appear to be culturally and personally neutral, validated only by such considerations as whether they allow for prediction, permit an "elegant" accounting for the particulars of a situation, permit us to manipulate the situation in certain ways, etc. These ways of conceiving of physical events are not a child's ways--as Piaget shows--nor are they the ways of folk taxonomies, as Fred Gearing and Douglas Oliver have both suggested in remarks to Tri-University Project conferences; all of us have felt an interpretation of a physical scientist to be "hostile" to us as it seemed to impinge on a cherished religious belief or personally felt interpretation of an event. To some extent, all of us are asked to be solipsists when we look through a microscope or observe a political or social event apart from our mythos. And we may have to go through the evidence or run through an experiment bearing on such cherished conceptions many times before a new construal comes to be palatable. We may even then surround the new construal with a whole set of private construals and reservations which are our own (cf. Jimmy Britton's speech for a description of the process). Now education seems to deal with public construals--"the way things are" beliefs--as neutral as anything. And its organization in terms of capacities to find "the way things are" and to respond indicating how they are, its procedures for advancing a child in terms of evaluating whether he knows how they are may appear as neutral as litmus (even as the selection of some version of radio announcers' English as the lingua franca of school talk appears to be a completely neutral "selection" of a medium of school communication). The transaction appears to be a transaction between the stylus and the wax tablet, the stimulus and the response.

The procedures of big business for dealing on an international level, their systems, appear similarly neutral, teaching people almost as soon as they are caught up in them to become part of a new class, cosmopolitan, empirical, pragmatic. But human culture does not change so quickly. We know that behind the "culture" of the "invisible college" or the "neutral system" of international business or the "neutral procedures" of physical investigation and the school which teaches it lies that other "culture" which is our past. It is reflected as Joshua Fishman has observed, in an American family's speaking a language other than English in the home, its giving a surname connecting a baby to lands of ethnic origins three generations back, in the art objects and knick-knacks about the suburban house, in the stories told about "our people" and the past of the family. The religious connections of the family frequently speak of such roots. So may the family get-together. So may the family's hatreds. So do the mother's and father's style of teaching a child--the whole silent, gestural business of instructing him how to live. The error of the school may not have been so much that it has not made all men members of the invisible college as that it has behaved as if most men and children really were already members of that college and as if all men should be superficially in language, conception of nature, value system and so forth whether they were at the depths or not.

Our children, even outside the ghetto, come out of homes as various as their pasts. But unless they come from Amish country or Navaho country they, probably, like their parents, come out of their various homes stylized as members of the invisible college and clothed in the anonymous clothing in which almost all children are sent to school. If their teachers dress to "look respectable," perhaps partly to cover their insecurity in the presence of the colorful, unrespectable masks of their pasts, partly to cover their less intellectual beginnings, partly to identify their class and role, they want their kids to dress in a similar style. The teacher wants her school to look good, to be organized in the style of the invisible college--Fred Gearing's schools which only reflect a "little, middle-class segment," the cosmopolitan "new classes." So does the principal. Even the architectural style of the school may express this desire to "look good." The school so organized then tells the child that it will tell him "the way things are." A woman who represents the system will stand at the head of the room and tell him. She will not have been trained in the school's particular neighborhood milieu or have studied the lives of its families.

The child will believe his teacher if he has great love for her and never detects any disparity between what is, in her saying of it, and what is, as he sees it.

In such a system, how does a child gain information? Not from a group. Not very much. He is alone. He may only recently have moved into the neighborhood. When he is in the classroom, he speaks primarily to the teacher or through her to other pupils. He may seldom speak apart from his adult supervisors on the playground (if Tri-University Project observations of playgrounds tell us anything about the typical). He must learn from the teacher and her books. He may learn if the system itself does not appear overly hostile to him--if his family is pretty thoroughly assimilated to the invisible college; if as we have mentioned, the authority is loved and what she says rings true. But if the family has taught a version of "the way things are" based primarily on a folk vision of natural things or on a picture of the social process rooted in ethnic or group experience of what is helpful and what destructive in it which is not that which the school purveys, then the school comes to the child asking him to view things from the perspective of an alien vision. It tells him that he is an intellectual alien (we can all remember feeling fumblingly alienated from the page when we first tried to learn to read). And the teacher's talk about facts in a lingo ever so slightly different from mama's, or the principal's talk about the way things are in the world of behavior and values in the same lingo, may not count for much. Given such a context, one must know the old blood rites before one tries to create a new college; in such a context, when new beliefs are introduced and the child's relationship to the old group threatened, the plausible thing may be to have the child learn many of his "the way things are" beliefs from actual manipulations of things (as several of the New Orleans speeches suggest) so that he can say "I see" rather than "she says." But the child has to learn more than to say "I see" in school if he is to escape the tyranny of the past and of the invisible college represented in his teacher: a confidence, a sense of autonomous group, a sense of talk, a sense of intellectual community. It is too much that a teacher should hope that love for her should credential everything with the child. But, if he, through experimentation and fooling around and talking, can build and record his own construals--those that are "right" as well as those that are "wrong"--he may come up with something which belongs neither to Naphta nor to Settembrini but to his own personal Self. Yet, even in this circumstance where the Self has made its own discovery, it will not trust itself if all of the pressure of the past and of the home is against accepting the insight and only the teacher for it.

A child needs a group at school--a real community with which to learn. One of the characteristics of healthy societies according to the UNESCO study which I mentioned earlier, is that the important social groups are small. Such groups can, if Mr. Britton and Miss Duckworth are correct, be formed in the classroom. They must gradually build their own vision and have it tested, discussed, modified by events and encounters with the adult world (trips, jobs, choices, responsibilities, analyses of the adult world, mature literature). As Jimmy Britton remarks:

> We construct each our own representation of the world but we work upon each other's. The fact that our representation has duration in time not only enables us to work upon it ourselves, but also to have other people work upon it. Martin Buber, the Israeli educator, lecturing in London many years ago, took as his text, "Experience comes to man as 'I'; but it is by experiences as 'We' that he builds up the common world in which he lives."

An elementary school must somehow, sometime, preferably at the earliest possible time, help to build up the common world in which we live by setting circumstances so that the child can become part of his own responsible child-society: one reflective of the multiplicity of the adult community, its liabilities and agonies, and yet one capable of finding conclusions at variance with those of the adult community, the "system," or the home. That is what children do in neighborhood play when they play healthily and in groups which develop hobbies that turn into intellectual obsessions.

Children so taught might emerge members of Freeman Butts' "world civilization" and members, in a constructive sense, of its invisible college. They would not, if they had decent adult guidance, create a "lord of the flies." They might also be able to make their peace and find their relationship to the world of the past and its multiplicity of mutually antagonistic societies, using the resources of the past and its pictures of what human endeavor means to build up their own picture of what life is about (even if they could not entirely understand "history" as such). New Orleans did, I think, implicitly say that children might become somewhat more cosmopolitan and capable of seeing through the eyes of other men if more of the responsibility for learning and for the "order of the school community" were, as early as possible, placed upon them. If schools which place such responsibility were created, they could have few gatekeepers in Haubrich's sense; they might be able to promote children who have some potential for becoming men who have a real sense of the variety of possible social roles, since they as children had themselves worked, from an early age, in a flexible system which placed the responsibility for others upon them. Children so educated might look upon education providing for the possibility of moving from role to role--however inefficient on the surface--as not only a concession to the necessary unpredictability of their future but as desirable in itself insofar as it gave them a picture of the problems facing various segments of society.

One would hope to gain from a decent educational process children who could really believe some of what they had found out at school, children who would believe that they individually and collectively could learn and act effectively to shape the school environment and the environments of other children. Finally, one would hope to find in such schools children who could begin to make their own complex of "new cultures": Martin Buber's "We." Faust emerges, from the daring classrooms of his new world and the agony of his subsequent aloneness, a builder of dikes.

Charting Our Position on the Way To - - -

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I find it both sobering and exhilarating to realize that my students who are now in their twenties will be about as old as I am now when the clocks strike midnight on December 31, 1999. I do not expect to be able to join them, whether sober or exhilarated, on that particular New Year's Eve which will usher in the year 2000, but my point is surely obvious. Today we are literally preparing our students to be teachers in the 21st century. And the children already born who will be their students will spend half or more of their lives in the third millenium A. D., or, if you please, they will spend their lives roughly in the sixth millenium since human civilization itself took form around 3000 B. C.

I have started this paper by looking to the future, and in four sentences I have brought in the remote past. I have done this deliberately, because (especially in our more sober moments) we must keep both the future and the past in mind if we wish to chart accurately our present position on the course of the human career. I call your attention to the way this point is put by my colleague at Columbia, Daniel Bell, in his introduction to the symposium on the Year 2000 which was reported in last summer's issue of Daedalus, the Journal of the American Academy of Arts and Sciences:

> Time, said St. Augustine, is a three-fold present: the present as we experience it, the past as a present memory, and the future as a present expectation. By that criterion, the world of the year 2000 has already arrived, for in the decisions we make now, in the way we design our environment and thus sketch the lines of constraint, the future is committed. . . . The future is not an overarching leap into the distance; it begins in the present.[1]

Now Daniel Bell and his associates on the Commission on the Year 2000 are quite right in their insistence that the future begins in the present, and I take it this is a basic assumption of this project and this conference. But I take it, too, that we recognize equally well that the present began in the past. And while the future may be more intriguing or dramatic to talk about than the past, the linkage is undeniable. Where then are we on the course from the past to the future?

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[1] Daniel Bell, "The Year 2000 - The Trajectory of an Idea" in Daedalus, Vol. 96, No. 3, the Proceedings of the American Academy of Arts and Sciences (Summer 1967), p. 639.

I would like to divide my answer into two parts, first taking a very long view and then taking a more contemporary view; both must necessarily be extremely sketchy and staccato in form.

We are, of course, accustomed to thinking of our times as "modern" in contrast to "ancient" and "medieval." This is perhaps the most common periodization assigned to Western history by Western historians. But our age is also often referred to by social scientists as dominantly "modern," or industrial, or technological or scientific in contrast to "traditional," pre-industrial, pre-technological, or pre-scientific societies. In addition, Peter Drucker talks about "post-modern" society, Daniel Bell and Bertram Gross speak of "post-industrial" society, and Kenneth Boulding of a "post-civilized" period in human history.[2] Now these are intriguing, and I believe important, terms. They illustrate that the human career can be defined in different ways depending on what theme or problem is uppermost for study.

My own preference, having the role of education in mind, is to think of three major transformations in the history of mankind: The first is the civilizing process by which folk societies adopt an urban way of life which we call civilization; the second is the modernizing process by which traditional civilizations become modern; and the third is the ecumenicizing process by which modern civilization is becoming world-wide.[3] I refer to these as historical transformations, but I use the present tense to emphasize that they are all still going on today in various parts of the world.

In the process of developing a literate urban way of life, beginning some 5,000 years ago in Southwest Asia, the social institutions of small homogeneous and intimate folk societies gradually became larger in scale, more differentiated, and specialized as farmers, herdsmen, and warrior bands became city-builders. Integral to this process was the invention of writing and the appearance of organized educational institutions based on written language and literacy and designed for small elites in the urban centers.

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[2] See, for example, Daniel Bell, et al., Ibid.; Peter F. Drucker, Landmarks of Tomorrow; a Report on the New "Post Modern" World (New York: Harper & Row, 1957); Kenneth E. Boulding, The Meaning of the Twentieth Century (New York: Harper & Row, 1965); Bertram M. Gross, The Managing of Organizations, 2 vols. (New York: Free Press, 1964).

[3] For elaboration of this theme see R. Freeman Butts, "Civilization-Building and the Modernization Process" in History of Education Quarterly (Summer 1967); and "Civilization as Historical Process" in Comparative Education, Vol. 3, No. 3 (June 1967).

A second great transformation began some 500 years ago in Western Europe when traditional urban societies began to become "modern" as they developed new modes of production and distribution of goods based on the use of inanimate power and more efficient tools. Underlying the technological developments were new social institutions still more highly differentiated and specialized than in traditional civilization, and, above all, new bodies of knowledge which were more scientific and rational in content and method, and new forms of widespread education made possible by the invention of printing.

Joseph Elder even goes so far as to define the essence of modernity itself as corresponding to "secular education" by which he means that type of education which endorses the establishment of objectifiable evidence as the basis for proof of phenomena in opposition to the type of education which endorses tradition or faith as the basis for proof of phenomena.[4]

The United States, much of the West, and some parts of the East are well launched into the stage of Modern Civilization. Many other parts of the world, and even some parts or sub-cultures of the United States and Europe, are still largely in the stage of Traditional Civilization. This gap between tradition and modernity, between societies that are at different stages in social development, accounts for some of the most critical problems facing the United States and the world.

To complicate matters still more, we are now on the threshold of a third great transformation in the human career, a social process that is becoming world-wide as a result of the organizational and technological revolutions of the past 50 years. These revolutions are associated with universal education, electronic forms of information gathering, storing, and retrieval as well as electric and nuclear power, and the enormous increase in the speed and transmission of energy and the transportation of material things and people. Bertram M. Gross of Syracuse has a lively term for this enormous speed-up in the movement over space of information, energy, and things; he calls it "Mobiletic Revolution,"[5] a process already familiar to most of us but still largely incomprehensible to many.

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[4] William B. Hamilton (ed.), The Transfer of Institutions, Durham, N.C.: Duke University Press (1964), pp. 140-141.

In the long view then, our position is one that brings us to the brink of a world-embracing modern civilization. What of the shorter view, say the last 50 years? I should like to mention four trends which I believe are enormously important for education and for the education of teachers.

The first is an increasing recognition that knowledge and education are themselves the basic sources of social change. This in itself is a drastic change from earlier and more simplistic assumptions that social or cultural development depended principally upon a favored class, whether merchant, industrial, proletarian, military, or a superior race or nation or religion, or a special accumulation of land, capital, labor, technology, or natural resources. The elevation of the role of knowledge and of education in the hierarchy of importance as creator and maintainer of civilization carries the seed of a shift which is of incalculable value for the educational profession. Mr. Chips now holds several trump cards to back up his growing stock of blue chips.

Let me mention a few examples of this trend. In a felicitous phrase John Kenneth Galbraith refers to the recent emergence of the "educational and scientific estate" as a key group in modern industrial society.[6] He argues that the rapidly growing body of educators and scientists in the schools, colleges, universities, and research institutions provide the decisive factor in modern production, namely, qualified talent and highly trained manpower, much as the banking and financial community provided the decisive factor of wealth for the earlier industrial system. What was once an inferior and tolerated caste has now become a large and increasingly powerful estate. The size of the educational community in the United States in 1900 was approximately 450,000, of whom the vast majority were elementary school teachers, and less than 25,000 were in higher education. Today, the educational estate approaches 3 million of whom slightly less than half are in elementary schools, and a half million are in colleges and universities.

This growth in teaching staff reflects, of course, the tremendous growth in school and university attendance in the past few decades. The greatest percentage increases have been in secondary and higher education: from less than 200,000 in high school in 1900 to nearly 15 million today; and from a quarter of a million in college to nearly seven million today. And the still more important thing is that the prospects are for continued rapid growth especially at the lower and the upper ends. The expectation is that in a decade the preschool enrollments will double (from 3 million to 6 million) and the higher education enrollments will nearly double (from 6 million to 10 million). Both of these increases will have fundamental meaning for the relatively more stable elementary and secondary schools: an increasing number of children will have a longer period of "schooling" before they enter the first grade, and an increasing number of high school graduates will go on to further formal education. The high school that was largely a college preparatory institution in 1900 is becoming once again principally a college preparatory institution. But there is now a fundamental difference. Whereas the high school in 1900 dealt with about 10 percent of youth of high school age and sent 75 percent of them on to college, it now deals with some 90 percent of high school age youth, and it may well be that it will soon again be sending 60 to 70 percent of them on to college.

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[5] Bertram M. Gross, Space-Time and Post-Industrial Society, Occasional Paper of the Comparative Administration Group, American Society for Public Administration, May 1966 (mimeographed).

[6] J. K. Galbraith, The New Industrial State (Boston: Houghton, Mifflin, 1967).

This is not simply an extraordinary quantitative expansion. It may well amount to a qualitative difference, for it is something new in all human history: the prospect of nearly universal secondary education leading to virtually universal post-secondary education. The term "educational civilization" which had such a visionary sound a few years ago is almost upon us.

But the expansion of the formal school and university system is not all. In another striking phrase Bertram Gross has coined the term "learning force" to embrace all of the people engaged in some form of group-learning process. He defines the term as follows: "the total number of people developing their capacities through systematic education -- that is, where learning is aided by teaching and there are formal, organized efforts to impart knowledge through instruction."[7] So if we add to the 60 million now in school and university, those 30 million who are engaged in vocational, technical, and professional training outside the regular educational structure, and those 20 million who take part in some form of adult education, we get a total of some 110 million people in the "learning force." This amounts to more than half of all Americans and considerably more than the total labor force in the country (some 80 million). Projections are even more startling with the estimate that the learning force in 1975 will be half again as large as the labor force, approximately 150 million to 100 million.

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[7] See, for example, Wilbur Cohen, "Education and Learning" in Annals of the American Academy of Political and Social Science, Vol. 373, (September 1967) an issue entitled "Social Goals and Indicators for American Society, " Vol. II, p. 83, Note 3.

But this is still not all. We now hear of the "knowledge industry" (a term that happens to grate on me) which includes not only organized education but the rapidly expanding fields of research and development, publishing and printing, entertainment, communication media, and information machines. It is estimated that close to $200 billion are being spent annually in the knowledge industry. This amounts to approximately one-fourth of our Gross National Product. Expenditure for education alone has surpassed $50 billion and thus totals nearly 7 percent of the GNP. So Education is not only Big Business itself. It is needed by Big Business, and it is a lucrative market and target for Big Business. All this requires that we look again at the kind of life our students are likely to lead in a society in which teaching is a major occupation and in which learning is a major preoccupation of the vast majority of the people for a large part of their lives.

This is a society in which the production of goods will require fewer and fewer people with higher and higher training, and the service occupations and professions (with as much as 70 percent of the labor force) will require more and more people with higher and higher training. In such a society the role of formal education becomes more important than ever. I am not one who believes or implies that because the "knowledge industry" is so active that the role of the formal school can be lessened or can be narrowed. I believe just the contrary. The more the predominantly non-educational agencies of society get into the business of education the more active and effective the predominantly educational institutions must become, and the more socially responsible professional autonomy they must demand and exert. What is good for the "knowledge industry" is not necessarily good for education. If the educational estate is to assume the mantle of moral, political, and social authority which has been worn in the past by the clergy, the statesman, and the wealthy, it may find that it must add to its rightly claimed freedom the social responsibility that goes with moral and social authority. Whereas education has been the tool of other classes throughout much of history, it may well now be in a position, as Clark Kerr has put it, to write its own independent chapter in history. It is a fearsome but exhilarating prospect. The education of teachers in this event must temper its transmission of knowledge and its development of skills with social vision and commitment.

By dwelling on the emergence of the educational estate as a major factor in social change I assume that there will be a closer relationship between all "levels" of the educational system, but I do not mean to imply that therefore the only function of lower schools is to prepare children for higher education. I look upon the "higher" and "lower" as genuine partners. The universities will inevitably become more and more specialized as they train for the increasingly complex range of intellectual, professional, and technical activities required by a post-industrial society, and the schools will need to make ready large numbers of their students for this training, but the schools will also have their own function of providing a common culture and a common medium of discourse that will enable the individual as well as the society to function together in ways that perhaps cannot now even be anticipated. The schools have as much right to exert their claims for participation in the educational estate as do the universities and the research institutes. Neither can exist without the other in the educational civilization of the future.

A second trend, closely related to the first, is the increasing speed with which knowledge is accumulating and the accompanying expectation that social change will be continuous as well as rapid. This takes the form most spectacularly of technological development and innovation, but what is often overlooked is that innovation and technology now rest heavily upon the deliberate partnership of academic organization, industrial organization, and governmental organization. This is part of the overall "organizational revolution" -- which has been going on for 200 years as large scale formal organizations have appeared in nearly all phases of modern society: Big Business, Big Government, Big Military, Big Labor, Big Science, Big Religion, Big Education.

Education must somehow reckon with the speed of the accumulation of "cultural content" of our civilization and the massive impact this ever growing cultural content will have upon the individual. We are all familiar with the predictions concerning what we are in for in the coming years -- some dire, some enthusiastic. These range from the now astounding but familiar developments in moon landings and heart transplants to such no-less astounding but still unfamiliar developments as automated language translators, drugs to increase intelligence and learning, direct electromagnetic interaction between the human brain and the computer, education by recording on the brain, et cetera, et cetera.

General Sarnoff in the Saturday Review of July 1966 predicted that the 1,000 computers of 1956 in the United States would become 100,000 in 1976 and the 12 billion computations per hour they could do ten years ago will become in the next ten years 400 trillion per hour -- or about 2 billion computations per hour for every man, woman, and child. Not only will every school have a computer but possibly every home. Your first reaction of course may be: "I don't want that much computation, I'll stick to reading." But then a billion books are being published every year, and they will soon be published electronically so that hundreds of lines of text can be set in a minute; and 2,000 pages of scientific knowledge are now being published every 60 seconds; and the whole Bible can be contained on a "2" by "2" piece of film by micro-imagery, and . . . et cetera, et cetera, et cetera.

Now, the usual conclusion to such a recital as this is that the speaker or writer urges that educators "get with it," beef up their educational technology, and start using computer assisted instruction, teaching machines, programed instruction, audio-visual aids, closed circuit television, team teaching, and teacher aides. And the usual reaction of the professional audience is to express alarm that the teacher will be ousted from the educational process or that the individual child will be lost or that personal contact in teaching will be destroyed. Or it may simply be a weary or wary suspicion that the exhorter really has some "hardware to sell."

I do not have this conclusion in mind. I assume that we shall be concerned about the impact of technology on learning. I assume that we must consider what kind of thinking and what kind of personality development will best enable an individual to cope with the constant bombardment of information and the multi-sensory, multi-media saturation of our lives that Marshall McLuhan talks more or less lucidly about. But I have another purpose in mind. I believe that we must try to recognize that the rapid accumulation of knowledge poses fundamental social problems for education that are basically different from any ever faced before. Universal literacy and universal elementary schooling were in their time revolutionary social developments having great impact upon the very structure of modern social organization, the rise of nation states, participant forms of political organization, economic and industrial development, and the like. Now, I am interested in the similar impact upon social organization that universal "information technology" will or may have in a post-industrial society. In other words, what kind of society shall we educate for?

What is even more important than the present speed of communication of knowledge, of energy, and of transportation is the cumulative mobilization of men and ideas designed not only to promote deliberate innovation in the technological field but to assure that continuing and constant innovating will continue indefinitely into the future. Now I know that "innovation" has nearly become a catchword or a slogan used by the newest educational reformers and their followers to prove that they are not stodgy members of the Educational Establishment, which is, of course, opposed to all innovation. But I do not have in mind here an injunction for teachers "to innovate," which often means "Stop whatever you are doing, and do something else - especially do what I think is important."

What I have in mind is the fact that the present day mobilization of scientific knowledge woven together with large scale social organization is now so effective that it seems destined to mean a constant transformation of society and of culture as far as we can see into the future. Scientific invention may be the business of university and industrial laboratories, but social invention to *cope* with technology as well as to promote it is surely the business of the entire educational estate.

The challenge to education is not merely to learn how to use the new technological hardware to make the instructional process more efficient, but how to enable the learners to live in and deal with a constantly and rapidly changing technological society. My emphasis here is upon how to cope with constant transformation in *society*, not technology alone. My colleague, Dankwart Rustow, in a stunning new book defines the modernization process as man's "rapidly widening control over nature *through closer cooperation among men*. It transforms both man and society, but most of all man's mind."[8] *This* is the fundamental locus of the problem posed for education by technological innovation: "cooperation among men" and "man's mind." Let us remind the educational technology salesman that the real business of education is not "hardware"; it is ideas, knowledge, teaching, learning, *and* their inter-relationship with social organization and cultural development, i. e., man and his developing civilization.

My third trend is closely related to the second; it has to do with a three-pronged development that has been taking place in the social sciences during the past 50 years and the gradual linking together of the three prongs in the last decade. The three prongs may be denoted as empirical investigation, policy orientation, and conceptual schematizations.

In the 1920's and 1930's American historians and social scientists, deeply affected by the horrors of World War I, were disillusioned with the prevailing theories of inevitable progress of Western civilization, with the nationalistic tone of the theories of social evolution which had come out of the 19th century and which seemed to find all peoples except Westerners as backward in the scale of social evolution, and with the individualistic, capitalistic bias of a Social Darwinism which somehow favored the well-to-do and the upper classes of privilege. As the disillusion was reenforced by the depression some social scientists and educational spokesmen turned to social theories that were heavily oriented to social reform, social crusading, and even social revolution. A policy orientation was paramount in their objectives, and conceptual schemes of a political and economic nature were popular, ranging from capitalism to socialism.

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[8] Dankwart A. Rustow, *A World of Nations; Problems of Political Modernization* (Washington, D.C.: The Brookings Institution, 1967). (Italics added.)

Empirical investigation was not in the forefront of the thinking of the reformist wing of social scientists and educators, but it was in the minds of a large contingent of behavioral psychologists, testers, anthropologists, and sociologists who assumed a neutralist stance as far as social reform in the U.S.A. was concerned and a position of cultural relativism with regard to the relations of one society to another. Cultural relativism said in effect that standards of moral, intellectual, and aesthetic value which grow out of one society are reflections of that society alone and are not properly subject to judgment or criticism or change from outside the society. So, outsiders should not try to change another culture. Many empiricists virtually took the stance, "I am a scientist describing society; social change is not my business except as an observer."

So, in over-simplified terms, the policy-oriented social scientists and educators employed ideological conceptual schema but neglected empirical investigation; and the empirically-oriented social scientists and educators neglected both policy matters and conceptual schema in favor of simply gathering hard data or "teaching facts."

Following World War II and expecially in the 1950's many social scientists and educators alike found it convenient to soft-pedal the reformist character of social science (remember the other Senator McCarthy?). They played down controversy and class struggle in their studies and teaching and generally reflected the Eisenhower period of social accommodation and conservatism at home or they reflected the Cold War abroad. In any case, an attachment to empirical investigation and to intellectual conceptualization as method of thought within the separate disciplines of knowledge (rather than as social ideology) came to fore. This was also the period of widespread attack on progressive education for being reform-minded instead of discipline-minded. You remember the roster -- Hutchins, Bestor, Lynd, Rickover, Koerner, Rafferty, and the rest.

Our response to these attacks and then to Sputnik was to reform science instruction in the schools and universities and then turn to the other subject matter fields, but these efforts have not been matched in importance in the schools by a renewed attention to policy-oriented research that has appeared in the social sciences. In the late 1950's and

1960's a growing number of social scientists (but fewer educators) began to focus attention upon conceptual schema that would be not only tools of thought within the disciplines but also would aid understanding of the most critical policy problems facing the nation and the world. The problem of war and peace, military strategy, political, economic, and social development of the new nations, world-wide modernization, world-wide urbanization and the development of megalopolis, rural transformation and migration, the confrontation of the super-powers, the population crisis, and a host of others.

These social scientists began to find that they could not divorce themselves from the portentous policy questions posed by problems like these. They turned to social systems analysis, organization theory, games theory, model building, ideal types, typology, and I do not know what all. But I do know that extremely significant work is going on in anthropology, sociology, political science, economics, and history in the effort to meld rigorous empirical investigation with policy-oriented studies which can be illuminated by conceptual schema that will give policy makers a handle on the regularities and uniformities in social behavior, on social change, and on social development. In some part the 19th century theories of historical social evolution have been substantiated by archeological digging; the idea of progress has been found to have a kind of empirical though not a moral justification; and cultural relativism sounds a little dated in the face of massive efforts by a hundred underdeveloped nations to borrow from and to emulate the already modernized nations as they attempt to move from traditional forms to modern forms of society.

My conclusion is that education and teacher education must somehow blend an empirical regard for hard facts with conceptual frameworks that will organize and generalize relevant knowledge in such a way as to be useful for helping to solve the critical problems that face the civilization of the world. A research institute may confine itself to empirical investigation; a think-tank may devote itself exclusively to conceptual schema; a political party or government may focus its energies on policy decisions, but the educational institution has the hardest job of all. It has to prepare people who can act in all three capacities with a sense of reason and a strong commitment to the improvement of public and world affairs. I see no lesser way in which education can perform its legitimate task of leadership in civilization-building. Otherwise it will be buffeted and perhaps even swamped by the rising winds of alienation, unrest, militancy, and violence whether symbolized by Black Power, or White Power, or Red Power, or Poor Power, or Rich Power, or Student Power, or Teacher Power. I know it is trite but I can find no other way to say it: The only antidote within reason for these Powers is Educational Power.

My fourth trend has two prongs which I devoutly hope will come together and support each other. They are the trend toward comparative study in the social sciences and education and the trend toward international engagement of the United States in the affairs of the world. Both subjects are of enormous importance, but only a few words can be given by way of outline for each.[9]

The first generation of American historians in the late 19th and early 20th century had an international outlook; they saw American history as part of European or imperial history. But Progressive historians like Turner, Beard, and Parrington began to look within the United States for its own distinctive characteristics; and a generation of American historians followed suit. Who can say what influence they had in building the generally ethnocentric if not isolationist view that Americans have of themselves? In any case, the trend has been reversing since World War II with a rapidly growing interest in world history, Western civilization, world civilizations, area studies, non-Western studies, and comparative historical studies.

Somewhat parallel experience can be cited for the other social sciences. The great sociologists of last 19th century Europe (Durkheim, Toennies, Weber) worked cross nationally and comparatively, and the first generation of American sociologists (Sumner, Thomas, Ross, Park) were deeply interested in comparative studies. But the empirical trend in sociology prompted the second generation of American sociologists to "study the small," as Immanuel Wallerstein puts it. So when you study the small, you study yourself, your local community, or possibly the U.S.A. But after World War II, some sociologists turned again to comparative analysis, to cross cultural studies, to the study of whole nations, whole societies, and whole regions -- or the comparative study of such major institutions as bureaucracy, empires, organization, family, elites, and the like. In fact, this interest of sociologists in comparative analysis was preceded by developmental and comparative scientists who began to adopt sociological techniques and conceptual schema in their comparative political studies and their studies of political development around the world.

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[9] For elaboration of my view and supporting bibliographies see my articles cited in footnote 3; also American Education in International Development (New York: Harper & Row, 1963); a task force paper on the International Education Act and Professional Education; forthcoming chapters in the Oxford Press publication of papers of the Williamsburg Conference on the World Crisis in Education; and in the 1969 Yearbook of the National Society for the Study of Education.

Anthropology showed a similar trend although it has always been more comparative than the other social disciplines. The giant anthropological synthesizers of the 19th century (men like Tylor and Morgan) tried to conceptualize the stages of human evolution that would encompass all human societies both past and present, but their work was often speculative, for they were handicapped by the lack of world wide empirical evidence for their schema. Then the anthropologists of the early 20th century took a narrower view, stressed the study of small cultures, especially primitive cultures, gave up much of the earlier and synthesizing historical interest, took on a heavy psychological orientation, and stressed the differences, the variations, and thus the relativity of cultures. But, of late, some anthropologists have become concerned again with the broad developmental sweep of cultures, with civilized as well as pre-civilized societies, the influence of one culture upon another, and the uniformities and regularities as well as the differences among cultures.

What all this adds up to is that strong elements in the American intellectual endeavor are now more conscious of the rest of the world and of the problems of the world than they have been for 50 years. But I believe our schools still largely reflect the ethnocentric views as well as the socially neutral stance of the university scholars of the between-the-wars-generation who were, and perhaps still are, preoccupied with looking inward instead of outward.

However, I have hopes that the second prong, i.e., the international involvement of the United States in the economic, social, political, and educational development of the rest of the world, will prompt the educational estate to make this the object of urgent, prolonged, and continuing study for that enormous "learning force" that promises to grow larger and larger. This should be at the top of the educational agenda as it is on the national agenda. But I am very much afraid that it is not very high on the priority list of many educators or of many learners.

And, finally, still less do we educators study, plan for, or work for what has has to come -- what is coming -- a recognizable and viable world civilization. The ingredients of an emerging world society are described thus by Bertram M. Gross,

> Today, unheralded and uncelebrated, a world society is slowly and painfully coming into being. It is characterized by the growth of increasingly interdependent nations, both industrializing and post-industrializing, of world-spanning organizations, of urban world centers, and of world-oriented elites. This growing interdependence is facilitated by communication-transportation systems that, for some activities,

are continuously decreasing the space-time distance between Washington and Moscow more rapidly than that between Washington and Wichita or Moscow and Mintz.[10]

I believe that study of the concept of a world society is of the first importance for American education. And yet I was appalled a few weeks ago when some of my younger colleagues at Teachers College argued that the concept of world society was so complicated that it could not be dealt with fruitfully at all by teachers or students in the schools. My institution has lately been described as developing a hard nose. I hope that nose does not become so hard that we cannot see beyond it.

I am convinced that the two overriding problems facing the United States today are: (1) How to create and learn to live in decent urban centers and (2) how to create and learn to live in a decent world civilization. And the two problems are closely related, for urbanization and the urban way of life are now encircling the globe. Not only does the world-wide urban revolution pose enormous threats to human dignity and serious danger to peace and security, but it also holds out great hope. Today the educated nucleus of the world's cities are beginning to form what Kenneth Boulding calls an "invisible college" of persons devoted to bringing into existence and spreading a world culture.

The world culture as the essence of modern life has, according to Lucian Pye, a degree of inner coherence:

> It is based upon a secular rather than a sacred view of human relations, a rational outlook, an acceptance of the substance and spirit of the scientific approach, a vigorous application of an expanding technology, an industrialized organization of production, and a generally humanistic and popularistic set of values for political life.[11]

What American education must do is play its role in building and strengthening the incipient world society described by Gross and the recognizable world culture described by Pye. Taken together world society and world culture in their interactions can constitute world civilization. For five thousand years formal education has been a formative force, sometimes conservative, sometimes innovative, in the building of civilization. The school itself as an organized institution arose as one of the building blocks of the first civilization as it emerged in the cities of the Middle East and as civilization later appeared in and related to the cities of India, China, Greece, and the West. As the school played its role in the building of the major civilizations of the world, it must now play its role in the building of a genuinely world civilization.

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[10] Bertram M. Gross, *op. cit.*, pp. 45-46.

[11] Lucian W. Pye, *Aspects of Political Development* (Boston: Little, Brown & Co., 1966), p. 10.

And the Greeks, bless them, had the words for it. The polis was the city, the creative center and focus of the civilized man's life. And the ecumene was their word for the entire civilized or settled region of the world. Outside the cities were the barbarians. In their ethnocentric view the ecumene of their day radiated out from Athens. We know now that great urban centers nourished the spread of civilization not only in the Middle East and Europe but in East Asia, South Asia, Africa, and finally the Americas. The polis which became metropolis, the mother city for colonies; or the cosmopolis to which people from the world came; or the megalopolis as it spreads along the United States East Coast (Boswash), or the Mid-West (Chippits) or the West Coast (Sansan) are only points along the way. The genuine world city or the city of a world-wide civilization is still to be created = the ecumenopolis.

That is an awkward word to say. The Greeks would have known better than to garble their beautiful language in that way. But the word "ecumene" should become better known. The churches have acquired a near monopoly on the word "ecumenical" because they have thought for so long in world-wide terms, but the modern world and modern civilization can no longer be wholly encompassed by The City of God or the City of Man as St. Augustine or St. Thomas viewed them. The scientific and humanistic and religious reformations in the West since the 16th century irrevocably set the world on a new course toward modern civilization. And now we are on a still speedier and more inclusive course--not just toward post-industrial society, or post-modern society, or post-civilized society, but a truly ecumenical civilization embracing a world society and a world culture.

Building the ecumenopolis is the overriding task before the world's educators. This is what the educational estate should be doing, this is what educational innovation and technology are for, this is the goal of the social sciences in education, and this is the purpose of comparative study and international education. Some progress toward this end is what I would like to think my students and your students and their students will be celebrating on New Year's Eve in 1999.

Critique

Charles Burgess
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Professor Butts has given us a heuristically and historically instructive view of the possible at the end of the century. We need to face our urban demands and the imperatives of world cooperation with greater imagination and unswerving tenacity. Since Freeman Butts has managed to construct a model outline, I may be forced to be the person who, in the phrase of W. H. Auden, will "read the New Yorker, and take short views" with you.

I would like to raise a preliminary matter for your consideration--regarding the nature of history itself before I come to my main point. Freeman Butts, in speaking of a world civilization as one of two desiderata before us today, has earnestly implored us to study, to plan, and work for what has to come: a recognizable, viable world civilization. I share his enthusiasm for the obvious benefits of such a community. While I suspect that his concern is as much with what ought to happen as with what certain trends suggest is happening, I am fearful that this audience might misunderstand him and find a firm teleological confidence expressed in such a phrase as the "world civilization that has to come." I have a modest dispute at this point with the "idea of progress"--not with F. Butts' idea of the direction in which we are likely to move but with the debilitating effects, the sometimes painfully apparent, debilitating psychological effects of this idea-at-large. Karl Mannheim is but one of many persons who deal with history who has insisted that the "idea of progress," as a doctrine repeatedly tends to produce a sanguine muddiness of thought and action: a good-natured, but often ineffectual hopefulness in the face of change--which may not be benign--and an abdication of the responsibility for making real progress happen. The "idea of progress" tends to make us intellectual vulgarians who pay less attention than we should to the lasting consequences of our mundane, daily decisions. Such persons hold a beautiful vision before them--we all ought to; they have a great, abiding faith in the "progressive-world-view"; but they ignore the necessary relationship between their tedious, daily tasks and the sort of world they yearn for. With Emerson they declare, "the great idea is so beautiful and ennobling, the immediate so mean and ignoble." It is precisely this kind of faith in progress which has helped to produce that sort of white liberalism which many black Americans today find repugnant.

The black man is not the only one agitated by such bland, immobilized, patient optimism. In spite of such spirited and splendid defenses of the idea as that found in E. H. Carr's What is History?, the idea of progress has taken other very questionable forms in our lay culture, and these forms are persistent ones. Consider, if you will, the appearance of growthmanship and "respect for quantity" described by George Santayana. Or note how the "idea of progress" has become a mandate for mendacity when it took the form of Manifest Destiny, that egalitarian version of the divine right of kings which was a distinctly mixed, a generally non-intellectual burst of jingoism that has yet to peter out. The idea of progress in its popular forms has posed serious obstacles to the fact of progress itself. It has before, and could again, thwart Professor Butts' rightful insistence that we hone our talents of intelligent inquiry, unrelenting attention to purposeful detail, and effective judgment in the making of policy decisions. Our sense of history, our fragile historical-mindedness, and our ability to fashion a future closer to our finest desires, is ill-served when, and if, we permit ourselves the costly and vain assumption that our ancestors lived out their days solely to make ours the best since time began.

In looking at "education and the progress of civilization," I, too, return to the Greeks and to Aristotle in particular; I would argue with Aristotle that whatever we want our schools to be, they are somehow bound to become the mirror image of the polis they serve. If we plan for better schools, we must sharpen our political skills.

Professor Butts notes, "I believe our schools still largely reflect the ethno-centric views of the university scholars, of the between-the-wars generation who were, and perhaps still are, preoccupied with looking inward instead of outward." To this I would add that the polis itself must be made to turn outward. The political dimensions of this general change should not be ignored. And planning for such change, in the estimate of Leonard J. Duhl, a fellow member of the symposium in Daedalus, to which Freeman Butts earlier referred--such planning must be careful and courageous, its complexion democratic: how to involve interested and affected persons in planning, without risking the tragic consequence of King Lear's decisions in Act I. Politicians, as Duhl notes, have the power to put bad plans into effect, but planners, if they are bad politicians, may not have the power to put good plans into effect.

Let me give a single historical example of how what looks like progress in education may constitute only change. I begin by calling to your attention the following from Freeman Butts' essay; it is worth repeating: "My conclusion is that education and teacher education must somehow blend an empirical regard for hard facts with conceptual frameworks that will organize and generalize relevant knowledge, that will be useful for helping to solve the critical problems that face the civilization of the world. A research institute may confine itself to empirical investigation. A think-tank may devote itself exclusively to conceptual schema. A political party or government may focus its energies on policy decisions. But an educational institution has the hardest job of all. It has to prepare people who can act in all three capacities, with a sense of reason and commitment to the improvement of affairs. I see no lesser way in which education can perform its legitimate task of leadership in civilization building. Otherwise it will be buffeted, and perhaps even swamped, by the rising winds of alienation, unrest, militancy, and violence, whether symbolized by black power, or poor power, or white power, or red power, or student power or teacher power." And ignoring flower power completely, Professor Butts concludes, "I know it is trite, but I can find no other way to say it; the only antidote within reason for these powers is educational power."

I subscribe to the spirit of this statement, understanding it as a call for an initially self-conscious sense of shared purpose. I would hope the educational power would remain a force used with some humility. Our present understanding is like the well-known exposed end of the iceberg; educational power can be used to humanize and channel change in an orderly direction. It can create a shared respect for diversity within the ranks; it can create a sense of toleration among honest men and women who find themselves in honest disagreement. But it is not always benign.

In a sense, educational power has been a vital force in our society throughout this century if for no other reason than that this is the century of compulsory education in the United States. Massachusetts led with a compulsory attendance law in 1852, but no state in the union regularly enforced the law until the turn of the century. And many states waited until the twentieth century began before passing initial legislation on the question (incidentally, one could note that compulsory attendance is one of the ways by which we made happen the expansive development of school attendance, which the earlier paper referred to). How well did that earlier exercise in the use of educational power, if I may call it that, work? How secure is the edifice of compulsory attendance now? Fortunately, I lack both the time and the grasp of the question to deal adequately with it. What follows is necessarily a brief distortion of "a more complete record." I will not accentuate the positive; that will not make my point.

I ask you to remember that the drive for compulsory attendance, and for strict enforcement of compulsory attendance, was an urban movement primarily. And I would not be surprised that a social historian dealing with compulsory education would someday, in the future, indicate that our predecessors were among the most vocal opponents of the idea of "the sanctity of the family." He may indicate that opponents of compulsion often turned to claims that the new legislation was a destroyer of family integrity; he may remind his readers that our educational predecessors, as proponents of compulsion, regularly retorted that the state's demands were superior to family ideals, adding to this the notion that the school was the public family center and/or denying that family life would be affected by an enforcement of the compulsory attendance law. Yet, such an historian may well question whether the state did not then inspire an invasion of parental authority. After more than a century of taking the opposite stand he may add his scratches to the barrels of ink now being shed over the shaky and shadowy form of the family at the mid-twentieth century mark. Some historian of the future is also likely to say that the advocates of compulsory attendance led in transforming the traditional argument that "it was the responsibility of the state to provide educational opportunity and of the child and parent to agree to accept or reject it as they would." The transformed argument was "since all are taxed, all are required to participate in the process." Will this transformed argument be seen some day as a specious syllogism, similar in form to an argument which might state that "where all are taxed for highways, all should be required to drive on them"? Such an historian might also note that the advocates of compulsory attendance, fifty-sixty years ago, were militantly (or at least quite insistently) opposed to any local control of attendance laws and curricular programs because one obstacle to the enforcement of the law was the sense of community (or as the advocates sometimes referred to it, the "sentiment of community") that existed in given neighborhoods. A sense of tribal solidarity made local officials reluctant to punish their neighbors for infractions of the compulsory attendance laws. The opposition to this sense of tribal solidarity was another critical reason for stressing (and gaining) increasingly centralized, less personal, and, hopefully, more efficient control of the educational processes.

Local teachers, and administrators who, by the way, were regularly accused of being too soft-minded about attendance were opposed to forcing children to remain in the class against their will. Some teachers were found dismissing reluctant scholars after the opening exercises and counting them present for the day. And teachers and administrators reportedly widely conspired to accept at face value any excuse offered by parents for their child's absence. Interestingly successful modifications of constitutional justice followed. Parents, for one, became guilty until proven innocent, in cases of student absences. Second, the due process clause of the 14th amendment was, and has widely remained, suspended with respect to school attendance, corporal punishment in the schools, truancy, modes of dress, etc. There is currently, however, a fascinating and possibly portentous revival of concern about due process rights for minors and their parents. It bears watching, I suspect. The School of Social Work at Western Reserve, I believe, is a leading center of activity in this area.

In sum, compulsory attendance has brought undeniable rewards to our society, helping us place two generations of youth into greater and more protracted contact with formal learning. But some historian might ask, "Have we too long worried about getting the student to school rather than about devising wisely various programs which would work to keep him there?" We are now living, I suspect, in a time of quiet struggle with the idea of compulsory attendance itself. While it has been widely accepted, as an eternal verity, as at least as old as the constitutional government itself, we may be missing the significance of ungraded, or non-graded, educational experiments for traditional concepts of compulsion. We may be missing the possibly portentous significance of the resistance of minority and special interest groups to compulsion in education. We may be neglecting the consequences of a wide range of judgments which our courts could render on the question. The Supreme Court has already indicated an interest in the due process rights of minors, in a decision given in May, 1967, which may be of lasting consequence.

Consider just two common cases; one tests our willingness to permit religious freedoms to be preserved when they conflict with state laws; the other tests our capacity to deal with the anguished relations between white and black Americans within the present scheme. First, the Amish have, with mixed success, steadfastly asked the state for reprieve from the standardized structural dictates and restraints of state education, and other groups have been and continue to be similarly affected. Second, increasing, often strident, and sometimes persuasive arguments against compulsory attendance in its present functional form are coming from black leaders in urban America. The schools, they maintain, are at best irrelevant to the realities and opportunities of the life which is accessible to the black child. They destroy what self-respect the child may have brought with him. The Freedom School impulse, for example, is but one of the more visible reactions to compulsory attendance, on the part of blacks and whites who are actively serious about modifying the compulsory attendance posture in the nation. To these voices, add Paul Goodman, who has enjoyed surprising support and handsome royalties, for his biting attacks on what he calls compulsory mis-education. And today not all of the states are wholeheartedly in the compulsory education camp. I wish to suggest two larger ideas with this history of compulsory education. First, even the trivia of the enforcement of compulsory attendance legislation have had lasting, and possibly detrimental effects, upon that legislation itself; therefore, *long range planning* and *attention to the nature of the community need today* ought to enjoy a stronger liaison. Second, even those conditions which we ignore, those we take for granted as having an eternal truth, can become very fragile when grated against by historical sands. I did not take us on this hurried, incomplete trip through the history of compulsory attendance for the purpose of advocating an end to compulsory attendance. I'm only asking that we consider seriously Freeman Butts' vision of our potential at the end of this century in non-teleological terms; I am asking that we resist being more confident of the certainty of a viable world community than of the certainty of a pyrrhic world conflagration. We should no more believe in the certainty that the laws of compulsory attendance are immutable than in the certainty, if you will, that our constitution is permanent (Daniel Moynihan recently noted that the approval of only two state legislatures is required in order for a national constitutional convention to be convened).

When Freeman Butts notes, and I quote, that "the two overriding problems facing the United States today are first, how to create and learn to live in decent urban centers, and second, how to create and learn to live in a decent world civilization," he is asking us to do the very least which our society can afford to have done. Whatever phase of the educational enterprise with which we may be most intimately involved, we must fashion a viable, long range, contextually enlightened sense of interrelationships and purposeful direction. We should also permit the mood of the essay just presented to survive this meeting to the end that during the meetings which follow and the days which follow we resist premature closure, view our hobby horses more circumspectly, and continue to phrase better questions. If we succeed in these efforts, we shall all gain.

A Child's-Eye View of Knowing

Eleanor Duckworth
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in Elementary School Science Teaching

There are two different kinds of things on my mind to talk about. There is probably a relationship between them, although I'm not sure I've found it yet. If there is none, then I'll just claim to be presenting two different papers at once. I hope that's all right with you.

Neither of my topics is based very much on new data to be presented. It is chiefly a matter of having some reflections to which I would like some response.

My first point of departure is the term "concept." Given my background, if there is anything I'm supposed to know it's what a concept is. But the fact is that I don't. For the past ten years I have dealt with that fact by never using the word. Last week, however, I was working with a group on the evaluation of a science curriculum project for African primary schools, and, as you might well imagine in discussions on evaluation of a science program, the word was in frequent use.

Here is what we were doing. This program consists of a number of studies which take four to eight weeks to teach. The studies are not necessarily tied together in an ordered curriculum. That is, one study does not build toward a later study, nor depend on any particular earlier one. What we evaluators set out to do, as a first step, was to examine each of these self-contained studies, in order to find what were the chief "concepts" in each one which the children were meant to learn. Then we proposed to proceed to try to evaluate the extent to which the children had in fact learned them. Some of us had reservations about this procedure, and for me it included the focus on "concepts." But we had to make a start somehow, and I was in fact a bit curious about where the use of the term "concepts" might lead me.

As I used it, I noticed some things. For one thing, I noticed a reason why I had never wanted to use it, why I had never found it fruitful. Concepts, on the whole, are stated as nouns, which one "has" or which one "hasn't." Children are said to have, or not to have, as the case may be, concepts such as "commutativity" (in multiplying numbers), "a square," "kinship," "energy," "shape," "the subject of a sentence," "justice."

Now this kind of statement of what a child knows, or is meant to know, seems very limited to me. I'm not sure how I would go about convincing somebody that it was limited, somebody to whom it seems useful. At any rate, it would be a long task, and I don't propose to do that. What I want to do is to suggest an alternative way of looking at what children know, which you might agree in finding more useful.

But in passing, despite what I've just said, I do want to make one small attempt to show why I think that dealing in concepts-qua-nouns is barren. It takes the form of an example where someone can "have" one of these things, and not be able to do much with it. From my sample list of noun-concepts, mentioned above, let's take "commutativity of multiplication." I should think one could be said to "have commutativity" if one knew that 47 x 22 would give the same number as 22 x 47; and in fact, given any two numbers, multiplying the first by the second would give the same number as multiplying the second by the first. And yet it is not hard to imagine that someone might very well know that, and I mean really know it, without any question, and yet never think of simplifying his life by turning around a problem like 47 x 22 into 22 x 47. (It is clearly easier to multiply 47 by 2 twice than to multiply 22 by two different numbers.) My point is that he could quite legitimately be considered to "have commutativity," if that is the way we have chosen to state what he knows; but if that is all we pay attention to, we're missing something. What he "has" is likely to be useful to him only when we ask him, "Does 47 x 22 = 22 x 47?"

One more aside before I get to my suggestions for looking at what people know. Since I was really meant to give a paper on Piaget, let me point out here that as far as I can recall, Piaget does not in all of his writings talk about the development of "concepts." Explicitly, this is all I have to say about him today. However there is no doubt that his outlook has influenced in a general way the development of these reflections of mine.

So that was the first thing I realized last week: that "concept" usually seemed to imply a noun, and when I'm trying to state things I would like children to know, I usually can't state them as nouns.

I continued to work in the group, and to use the word with my colleagues, as we tried to analyze what the children were meant to learn, when they used the materials developed by this project. But as we proceeded, it became clear that in point of fact, there were many things we wanted children to learn in this program that could not be summed up in a noun. Let me show specifically how that became clear.

We had broken into pairs, each pair to examine carefully one of the studies in order to find what were the central things that the study hoped to teach. I was working with Bill Walton on a study of which he was the author, called "Making Things Look Bigger." It is concerned with making and using a simple magnifier and a simple microscope. Bill has managed to design a magnifier made of cardboard, water, and a matchbox, and a more powerful and flexible microscope of cardboard, water, a sliver of wood, and a piece of thread. Each child is given a booklet, in the back of which are two pages of cardboard printed with cut-out designs. The child cuts the cardboard, folds on the dotted lines, and assembles the various pieces as directed. He makes a pinhole to look through. For a lens he uses a drop of water. A piece of cigarette foil is used as a mirror to direct the light. It is a beautifully elegant instrument.

In the unit, Bill included some effort to show how a simple microscope works: what is the function of the pinhole, of using a bigger drop of water, of getting one's eye close, of moving the lens up and down, of turning the little mirror. But much more important than that, what he really cared about, was that children should learn that all around them there is a world of tiny things that they have never seen before, or even thought of trying to see; that it is fun to see these things; that they can make a tool to look at these things out of simple, unmysterious materials; that if they share with their friends the things that they see, everybody is likely to end up seeing more; that they can follow printed directions to some purpose.

It really did not matter much whether the children learned how the microscope worked; nor whether they learned about the internal structure of unicellular animals; nor whether they learned about the optics of a water drop. Another study of the microscope might have these as major aims, and they would be perfectly legitimate. But they were not the major aims of this one. The two studies would be taught very differently.

Now "Making Things Look Bigger" is no doubt an extreme case. The majority of classroom work would state aims that could much more easily be referred to as "concepts." But most people nowadays do believe that the kind of goals that Bill aimed at are important. Many curriculum projects, ministries, teachers, school reform programs list among their educational aims general statements about developing the students' interest in learning, and their ability to continue learning on their own. As a case in point, here are the stated goals of this African Primary Science Program, subscribed to by everyone in any way connected with the program--ministry officials, scientists, the funding agency, teachers, etc.:

1. to give the children a first-hand knowledge of the material world;

2. to develop an interest in further exploration of the material world;

3. to give them confidence in their ability to find out about the material world on their own;

4. to help them know how to make discriminating use of secondary sources--colleagues, books, radio, experts.

Bill's aims can readily be seen to fall within the realm of these stated goals. So it was certainly legitimate for us to be concerned with them. But you can appreciate that it was difficult to list them as "concepts" to be learned--very difficult to sum them up as nouns!

But it occurred to me that they could be stated as sentences. And as such, they did represent beliefs that we wished the children to develop. Each one of Bill's aims could be broken down into sentences that a child might say to himself (whence the name of this paper). For example, "Sometimes people miss things when they look; it's a good thing there are other people to check with." And then it occurred to me that these beliefs were all things to be learned, and in fact had all the same characteristics of the more limited set that we have been referring to as "concepts." Here are characteristics which I think hold true of anything that anybody believes:

A. An opposing belief is conceivable, and would give rise to different actions, in a situation where the belief is pertinent.

B. You may have learned it by being told, or you may have concluded it yourself from evidence that you have been told about, or you may have developed the belief from your own personal evidence.

C. It can be confirmed or disconfirmed by further evidence (yet evidence which may be confirming or disconfirming to one person may be irrelevant to another).

D. A verbal statement of the belief may not really mean that the belief is held:

  i) You may enunciate it because you think it is expected of you, even though you know you don't believe it;

  ii) Or you may think you believe it although you really don't--it conflicts with some other belief which really determines how you act.

And here are some examples of four different kinds of beliefs, all of which I think share these characteristics. They correspond to the four stated goals of the African Primary Science Project, because I think that those four goals could be generalized to characterize most of what we would like children to learn.

1. Beliefs that have to do with knowledge of the world I am going to call "the way things are" beliefs. An example would be, "A lens that is more curved magnifies more than a lens that is less curved."

2. Beliefs that have to do with interest in a given pursuit I shall call "it's fun" beliefs. An example would be "It's fun to read poems by Randall Jarrell."

3. Beliefs that have to do with being able to do something I shall call "I can" beliefs. As an example, "I can figure out how much wallpaper I need to paper a room."

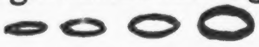
4. Beliefs that have to do with sharing one's knowledge, and knowing when to call upon other resources, I shall call "People can help" beliefs. (By far the most widely taught of these in our schools at the moment, by the way, is "Teachers know everything.") As my example, I shall take, "My grandfather is the best source of information there is on what Montreal was like in 1910."

I shall now attempt to show that there is really no difference in kind among these, in terms of the four characteristics of beliefs that I have listed earlier.

1. "A lens that is more curved magnifies more than a lens that is less curved."

A. It is very easy to think of a situation that puts this belief to the test. You want to magnify as much as possible, and you have two lenses to choose from. One is a small sphere ● and the other is a thicker piece of glass with a slight curvature at top and bottom ▢ If you hold that greater curvature magnifies more, you will choose the small round one; if you hold that thickness magnifies more, you will choose the other.

B. Someone may have told you that the greater the curvature of the lens, the more it magnifies. Or someone may have shown you a group of lenses and told you what you could see through each of them, on the basis of which you generalized the rule for yourself; or you may have looked through a lot of lenses and reached that conclusion on your own.

C. Confirming and disconfirming evidence is easy to think of. I won't bother here. But I would like to show how the same evidence might lead one person to believe one thing while everyone else believes something else. Let us say that you have four lenses, all of the same diameter. In cross-section, however, they range from being thin and scarcely curved to being thick and very curved  In fact, the thickest, most curved of these lenses would magnify most, and the thinnest least curved magnify least. If you believe curvature is the factor, then looking through these four lenses could be seen as confirming it. Someone else, who believe thickness is the factor, could take this evidence to confirm his belief. If this were the only evidence anyone had thought of offering, you might be the only one who believed that thickness was irrelevant.

D. i) You may have been taught to say that more curved lenses magnify more, having been shown the evidence from the above four lenses. But you may have noticed that the thickness also changes, and you may say to yourself, or to a confidante: "I'll say it's the curvature, because they want me to, but I really believe it's the thickness."

or ii) Given the above evidence, you may say and think you believe it's the curvature, without ever noticing that you were basing your choice on the thickness, and that the thickness wasn't necessarily correlated with curvature. Even to yourself or to a confidante you would say that curvature was the factor. But confronted with the choice under 1A, you would choose the thick one.

2. "It's fun to read poems by Randall Jarrell."

A. I happen to believe this statement, but many people could very well not believe it. I think it is quite clear that in the case of children, this is a belief that we want to work to develop. Whether or not one believes it can determine whether one chooses to spend time reading Jarrell's poems, or indeed to spend money buying books of them.

B. You may believe this because someone you trust has told you that poems by Randall Jarrell are a delight; or someone may have told you that a poem by Randall Jarrell can really let you know what it feels like to be a chipmunk, and that appeals to you; or you may have read lots of poems by Randall Jarrell, and taken pleasure in the reading.

C. Confirming evidence could be meeting more people who tell you that it is fun to read these poems; or learning the additional fact that one of his poems can even let you know what it feels like to be a mermaid; or reading more of his poems and enjoying it.

Disconfirming evidence could be meeting people who say it is boring; or learning the additional fact that his poems can make you realize how frightening it is to be a bat when an owl is on the hunt, and you have a dread of being frightened by night-time things; or reading his poems and being bored.

Note once again that evidence which is ostensibly the same can be confirming for one person and not for another. Though we both talked to the same person, I may trust his judgment and you may not. Though we both read the same poem, you may have seized the lilt of the rhythm and I may not.

D. i) Everybody around you is saying that it is fun to read poems by Randall Jarrell, so you decide you had better say the same thing, even though you don't like it at all. To a confidante, you would confess it.

or ii) You had so expected to enjoy reading these poems that you didn't notice that in fact you had to force yourself through them. You keep saying--and believing--that you enjoyed it; but you never manage to find the time to read any more of them.

Let me point out here in passing that most of us would say, and think we believe, that microscopes are inherently fun to look through. But how many of us have made a $15 dollar investment in a good small microscope to have around the house? I haven't. In order to really believe this, we need to have overcome the initial difficulties and taken pleasure in seeing things. And the role of a teacher is clear--to make sure that the microscope we have in our hands is adequate, and to encourage us while we develop our technique to the point where we enjoy it.

3. "I can figure out how much wallpaper I need to paper a room."

A. If you have a room to paper, whether or not you believe this will affect whether you do the calculations yourself, or whether you find somebody else to do them.

B. You may have been told this: "Yes, you can do it; go ahead." Or you may have developed this confidence by having done such calculations before. Or you might have seen someone else do it, and decided that you could do it too.

C. You might try and find you had succeeded; or you might try and find that you had failed. Whereas the former is likely to be confirming, and the latter is likely to be disconfirming, neither one is necessarily so. In the former case, you might say, "I was only able to do it this time because the wallpaper roll was just the right width; I could never do it again." In the latter case, you might say, "I made that one silly mistake in multiplication; I really could have hit it right if I'd concentrated."

D. i) You could say you can do it, so other people will believe it, without really thinking that you can.

or ii) You might think you believe it, without realizing that when you hired someone else to do the job it was not for want of time but for want of confidence.

4. "My grandfather is the best source of information there is on what Montreal was like in 1910." (This example comes to mind because of an excellent social studies project which was underway at l'Ecole Nouvelle St. Germain in Montreal where I taught last year. It was a study of what Montreal was like from 1900 to 1920, based in large part on children's interviews of people who had lived there at that time. This was supplemented by newspapers and magazines, schoolbooks, family photographs, toys, clothes, and tools of that time. Along with learning what Montreal used to be like, they learned a good deal about the kinds of sources available to historians, and how dependable they are.)

A. If you want to know what Montreal was like in olden days, your belief in this matter will affect whether or not you go to ask your grandfather.

B. Your mother may have told you, "There's nobody like your grandfather for telling you what Montreal was like in 1910." Or your cousin might have told you lots of things that your grandfather once told him about Montreal in 1910. Or your grandfather may already have told you more things about old-time Montreal than any one else ever did.

C. Confirming evidence would be talking to someone else who tells you how much your grandfather knows; or finding that after talking to your grandfather you know lots more things about old Montreal than any of your friends have been able to find out. You might even find that he knows more about how they used to make soap than is written in a book you have found on soap-making in old Montreal.

Disconfirming evidence would be finding after you talked to him that you still didn't know much about the topic; or finding that what he said about the collapse of the Quebec bridge was contradicted by three different newspapers of the day and by your grandmother.

On the other hand, your grandfather might tell exactly the same tales to both you and your brother, tales that are contradicted by other people; your brother might decide that your grandfather really didn't know so much, but you might have such faith in your grandfather that you prefer to discredit all the other sources.

D. i) You might decide to say that your grandfather was the best source, in order to humour him, because you know he likes to believe he is; but you really believe your teacher is a better source.

or ii) You might think you believe that your grandfather is the best source, without being aware that you never really believed what he said until you had found it corroborated in a book.

Before I go on, let me make it very clear that in talking about the importance of "it's fun" beliefs I am not trying to say that learning must be fun. Let me take an instance where it is not likely to be.

It's hard for me to conceive of anybody enjoying learning how to spell. For the most part, I expect it would be unrealistic to try to teach the belief, "It's fun to learn how to spell." But that doesn't mean that I think people needn't learn to spell. In this case, we probably have to depend on a "people can help" belief--"My teacher knows what's important to learn." And then be content with a collection of "the way things are" beliefs of the type, " 'Separate' is spelled S E P A R A T E." And no doubt the additional "people can help" belief, "If I forget how to spell a word I can check it in a dictionary."

Now let me point out why I think it is important to consider all these kinds of beliefs as essentially the same. As I said earlier, most people nowadays subscribe to goals of the "It's fun" and "I can" type. But when it comes to detail, almost never does one see a concern with anything other than "the way things are" beliefs. For instance, in new curriculum programs which break a study down into lesson by lesson plans, clearly stating the goals for each lesson, these goals are almost without exception "the way things are" beliefs. And this is despite the fact that the general goals of such programs almost invariably mention things like interest, confidence, and resourcefulness. This is of course because it is difficult to produce a noticeable change in any of these in the course of one 50-minute lesson. But notice that as a result all the effort is put into attaining the goals which are stated for the lesson.

There is another way in which detail reveals a neglect of these stated goals. A study might be conceived, say, as a two-month unit, with no lesson by lesson outline. Goals are stated for the study as a whole, and they include all the kinds we have been discussing. But at the end of it, somebody insists on an evaluation. This is the situation we are in with the African Primary Science Program, and it is in fact a very general situation. Without a second thought, attention turns to the beliefs which have traditionally been tested--"the way things are" beliefs, and the degree of success of the study is judged on the basis of such tests.

I am sure I don't have to insist on the consequences of this. Everybody is aware that there is a terrible tendency for testing to determine teaching. The other goals--although stated and no doubt believed in--do not get their share of the teacher's concern and effort.

Now there are many reasons for this neglect in the detail of the other stated goals--historical reasons, technical reasons, administrative reasons. But I think as important as any is the fact that things like "interest" and "confidence" are generally considered to be vague and imprecise "affective" aspects of a child's education, and as such different in kind from "knowledge." One acknowledges their importance, but one doesn't know what else to do with them. One hopes, perhaps, that if we are good at teaching "knowledge," the others will necessarily develop, too.

This is why I think it is important to see that they are not different in kind. If we state as teachers, or administrators, or psychologists, that our objectives include the awakening of interest and the development of confidence and how to make discriminating use of resources, then we must think about teaching these beliefs just as carefully as we think about teaching "the way things are" beliefs. All of these have to be learned, and all of them can be confirmed and disconfirmed in various ways with varying degrees of validity. And they can all be broken down into manageable specific beliefs to be learned. You can take pleasure in the romantic imagery of Shelley without appreciating the critical wit of Alexander Pope. You can believe in your ability to solve quadratic equations without believing in your ability to prove Euclidean theorems. You may be able to see through a pseudo-scientific television commercial without being able to sift reporting from opinion in an inflammatory newspaper article.

Another thing which I think this analysis can reveal is that teaching some of these beliefs can get in the way of teaching others. This increases the urgency of our being aware of all of them. We must decide to what extent one is willing to let one suffer in favour of another. An excellent case in point is the study of the microscope, "Making Things Look Bigger," where learning more about the physics of magnifiers may mean learning less about what fun it is to use them. We have to decide, then, that a class in which every child takes his magnifier home with him at night and runs back for it if he forgets if, but nobody knows that the apparent size is a function of distance, would score, say, 95 out of 100, whereas the inverse case (all know the rule but nobody looks unless they're told to) would score 5. Notice how awareness of the relative importance of these two beliefs would influence the way a teacher dealt with teaching this study. And notice how testing the first class on their knowledge of the physics of a magnifier would totally overlook the fact that they are developing a whole new sense of something that is worthwhile doing.

Here is another example of possible interference among different kinds of beliefs. Another of the science studies deals with finding the optimal germinating conditions for different kinds of seeds. One of the beliefs that this study sets out to develop is, "I can learn about seeds by experimenting with them." Another is, "I can save time learning about seeds by finding out what experiments the others have done." Now in a certain sense, these two are in conflict. On the one hand, he is learning that he knows most about what he does himself, and on the other hand he is learning to depend on other people's reported results. We want, then, to be aware of this conflict, and include in addition beliefs of the following sort: "Some people are more dependable experimenters than others."

There is one other implication I should like to mention. It seems to me that this broader view of what we want children to learn can shed some light on problems of instructional strategy--the continuing debate about the "discovery method," for instance. ("Discovery method," like "concepts," is another term I never use. In this case, it is because it means too many things to too many people. It is hard to know what one is talking about.)

Allow me, if you will, to draw upon our work of last week for my examples again, since it is in that context that I have given most thought to this matter. In some of the studies, one of the main beliefs to be taught is, "I can think of how to find answers to questions." One such study is called "Ask the Ant Lion." An ant lion is a small creature slightly larger than an ant, which digs interesting little holes in the ground in which it catches ants for food. Children set about finding out about ant lions by watching them, finding questions to ask, and figuring out ways to answer their questions. What question the child finds an answer to is not very important. What is important is that he realize that he can find answers to his questions through his own investigations. In this case, then, if the teacher says, "Oh, I see you're not getting it; what ant lions do is catch prey with their pincers," the aim of the lesson is lost. The belief to be taught was not, "Ant lions catch their prey with their pincers," but "I can find out how ant lions catch their prey." In this case, not telling how ant lions catch their prey is not just a cute teaching gimmick. It is an essential.

In another case, however, there is every justification for telling the children what you want them to know. To take "Making Things Look Bigger" again, at one point it is necessary for children to know that if they add a drop of water to the pinhole they are looking through, they will be able to see more clearly. In this case, the major aim is not, "I can think of how to make things look still clearer." It is simply, "Things will look clearer if I add a drop of water." Having children try to guess how to make things look clearer is then of relatively slight importance.

Once again, it seems to me, being aware of the various kinds of beliefs we want to develop can help us in our decisions about how to go about our job.

Just before leaving this first part of my paper, I would like to acknowledge quite clearly the enormous difficulties involved in trying to evaluate the development of these various kinds of beliefs. The only obvious thing is that pencil and paper tests won't do it, and that is certainly an essential starting point to recognize. But finding what will do it, if it is possible at all, will require enormous imagination and effort.

The second part of my paper has to do with the training of teachers, and, as I said at the beginning, I am not sure this has anything to do with the first part of my paper.

First, I think it is very important for teachers to have a chance to watch themselves learn. One of the most intriguing teaching experiences I ever had was with a group of teachers spending two hours a day, for four weeks, studying circuits made with flashlight batteries of different sizes, light bulbs, magnets, and wires of different resistances. An enormous amount can be learned about electricity with nothing more than these materials, as witnessed by the fact that at the end of the four weeks we were all aware of enough questions which remained to occupy us for at least that long again. But the interesting things was that at the same time we paid attention to how the teachers were learning. Not in a heavy, self-conscious way, mind you, but from time to time aspects of their learning leapt into prominence. Several times they came to an obstacle in their work, and had to step sideways to solve an accessory problem before proceeding, only to find after solving it that "Of course, we 'knew' that a week ago!"

In another instance, two different problems appealed to two different groups, and they each went to work independently. After two or three days' work, having reached a degree of closure on their own problems, they reported to each other, and found that, through totally different routes, they had reached an understanding of the very same phenomenon.

At one point, we had come to a dead end in trying to understand "resistance." From the start, they had been using it as a cover-all explanatory term for almost any situation they didn't understand. ("Air pressure" is often put to the same use, by both children and grown-ups.) When they got to the point of wanting to get behind the shield of that word, it was clear that they could not get away from the ill-understood, conflicting senses in which they had been using it. So we outlawed its use. For a couple of days, they were forced to talk about what they were doing and seeing without falling back on it. When they finally developed a real feeling for a specific phenomenon which enabled them to make predictions which worked, and which then could be referred to by a name of its own, they thoroughly understood the havoc that is created by substituting impressive words for clear statements of what you are talking about. (Stretching things a bit, maybe this can be taken as an example of sentences versus nouns.)

As another instance, I would like to mention an occasion when I was trying out an idea with a single teacher, who just happened to be visiting. I had been working on the development of a study of pendulums. Let me tell you as briefly as I can the problem that arose. The apparatus is a support from which are suspended two threads with hooks on the end. The length of each thread can be adjusted by a screw arrangement at the top. A variety of bobs are available to hang on the hooks. Various factors can be studied, then, by comparing the swings of these two threads, which can be put at different lengths, or hung with different bobs.

A pair of us were teaching the first pilot class of this study, and so far, all we had used as bobs were glass marbles, all the same size, and steel balls, of the same size but a different weight. Children had explored the effects of different lengths, different weights, and different ways to set the pendulums in motion. Now I wanted to raise the following question: suppose you want to make one pendulum half the length of another. Where do you measure the length? Do you take half the length of the string, down to the hook? Or do you take half the whole length, right down to the bottom of the bob? Some elementary thought on ratios shows that these two "halves" don't come out to be the same. As it happens neither of these two alternatives is right. You actually want to measure, not to the hook, nor to the bottom of the whole affiar, but down to the middle of the bob (not precisely, but this is an adequate approximation for most elementary purposes).

To get children to realize this, it occurred to me that they should compare a small round bob with a long cylinder, and see that, in order to get these to swing at the same rhythm, they have to adjust the length of the small bob so it hangs about opposite the middle of the cylinder.

Now the problem with this is that one has to pay attention to a possible difference in weight between the two bobs. But--and I am sorry to announce this, because if you don't know it it's so much nicer to find it out through playing with pendulums--in point of fact you don't have to pay attention to a difference in weight. Two pendulums of the same length (down to the middle of the bob) will swing at the same rhythm no matter what their weights.

The children in the pilot class were already on their way to realizing that. But I wanted to try out my idea of marble vs. cylinder on somebody before I tried it in the class, so I prevailed upon a teacher who happened to be there, and he cheerfully agreed to serve my purpose. To bring him up to the level of the class, I gave him a crash program which consisted of comparing a marble ball on one string with a steel ball of the same size on the other string. After a few predictions, trials, and adjustments, he realized to his surprise that the two would swing together if they were at the same length.

So now I was ready. I gave him a cylinder to substitute for one of the balls, and asked him how he would make a cylinder and a ball swing together. To my amazement, before he even started to think about whether to line up the hooks or to line up the bottoms of the bob, or look for some other point to line up, he said, "Let's see now, are they the same weight?"

What an insight that gave both of us into the trials of teaching and learning! I reacted by crying, "But you just did weight!" To which of course he reacted by being shaken and embarrassed. When we both came back to our senses, we realized the two remarkably important lessons we had learned. He as a learner seemed to have learned something quite straightforward. But this linear elegance simply had not served the purpose. Certainly he had learned something, but this one stripped-down instance had not been sufficient for him to learn solidly, "Weight doesn't make any difference." Learning is messy.

On the other hand, I, as a teacher, had the impression that I had taught something quite straightforward. And my reaction to the inadequacy of my teaching was to embarrass him.

We both, fortunately, learned both these lessons well.

Learning about the physical world is perhaps ideal for watching yourself learn. You can assess yourself so well: can you or can't you predict what will happen now? And so many networks can be found in which ideas re-cross and re-inform each other. I have a tendency to think that even if the teacher is not going to teach science, pursuing a study of this sort would play an important role in revealing the intricacies of learning in general. But I may be wrong. It may be that the important factor is that he learn something very new to him, and other subject matter areas might fill the bill just as well. Science teaching just happens to be the area I am most familiar with.

The other main suggestion I have is that prospective teachers spend a significant amount of time in a one-to-one teaching situation. Once again, this is in the interest of learning more about learning. The pendulum example can serve as an instance here, too, I think. I think that the lesson I learned from that as a teacher could not have been as stark in a classroom. I probably would have thought I had missed something that had influenced the student in the meantime. It is surely rare to learn so much as a teacher from one 15-minute tutoring session. But ten sessions, say, of watching the same person develop mastery in some small area could not but be revealing of what learning is like.

As an extension of this, I think it is also enormously revealing to tutor independently a number of different individuals in the same topic. This can bring into very sharp focus the manifold different ways in which people can come to essentially the same mastery. This, by the way, takes on some aspects of psychological research. What in fact is in common about the many different ways of learning that can reach the same end? How many different pendulum-naive adults would react as my sample teacher did in that specific situation? This in a nutshell describes the research Piaget does. There is no reason every prospective teacher could not do some.

There is another aspect of one-to-one teaching which might be important, too. A mathematician friend of mine, Lee Evans, has made me aware of this. So far I have discussed the role of tutoring in shedding light on the nature of learning. It can also shed light on the nature of teaching. In her tutoring, Lee realized much more rapidly than in any other way the importance of keeping the pressure off. You simply can't force. If you force and it doesn't work, there is nowhere for you to go. The situation disintegrates. Needless to say, she also learned how not to force. It's not easy for a teacher to let go of his plan of how he expected things to proceed.

Since she made me aware of this, I came to recognize in retrospect a tutoring situation in which I was forcing a nine-year-old, in the context of some research in mathematics learning. This was a long time ago, when I was still a rather bad psychologist. The problem for the day had been decided in advance and typed on a card. It had even been tailored for this particular child, in terms of the direction in which he had gone in the previous lesson. He read the card, and set to work on a problem that was related, and suggested by the problem on the card, but not in fact the problem given. I kept trying to get him back to our determined problem of the day. "Yes, but," I kept saying, "that's not what you're trying to do." This situation proved less tragic than it might have, because this boy was unusually determined and articulate. He finally got me off the hook by exclaiming, "Yes it is. Yes it is. It's what I'm trying to do."

Well those are my reflections. It would be nice to have reactions to them. Maybe somebody can help me see whether there is any necessary relationship between the two parts of my paper.

Critique

John Flavell
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I did not have an advance copy of Miss Duckworth's paper, which is hardly surprising, considering where she was when she wrote it. I have learned from this and from previous experience in conferences, that this is the way things are. I also hope that I will learn that being a respondent is fun, and that I can do it, and that other people will help. What I would like to do is talk quite briefly, not off the cuff as I usually would do, because I am simply too scared with all these people here and this short time to prepare, but reading some very brief notes on some things that occurred to me in her talk.

Three points that Miss Duckworth made struck me as being particularly important. The first is that we really ignore, at our peril, what might be called meta-learning or para-learning in children. Perhaps meta-learning is no better substitute for the word "concept" than the one Miss Duckworth used, namely, belief. But somehow, there is something "meta" or "para" about it. It is learning about some aspects of learning. The child is having an experience and he is also getting some kind of feedback about that experience. While he's learning "x" he's also learning perhaps that it is fun to learn "x" and that he can--he himself can--by his own efforts learn "x" and that others may help him learn "x". I think the meta-knowledge that results from meta-learning tends to be invisible to teacher and to learner alike, except when someone like Miss Duckworth calls our attention to them.

Much of the way things are is also invisible. For example, I would submit that the following are things that children must learn, and probably at as early an age as possible. First of all, that the world is predictable and orderly, to some extent. Secondly, that things are not always what they seem to be at first glance, that things look different in different perspectives, and to different human minds, and so forth. It often, I think, takes the genius of someone like Piaget to teach us about these fundamental but invisible pieces of knowledge that all of us somehow get into our heads--knowledge about the way things are. And it may take some other genius, perhaps, to tell us how, then, we should be able to get them into children's heads as effectively as possible.

With respect to the four kinds of learning that Miss Duckworth identified, I would, first of all, like simply to applaud them, and then go on to offer some supplements. First of all, the way things are, as one form of learning. I think the way things are is often not very easy to determine, and that the child must also discover that many things are, so to speak, not the way he thought they were. He must also learn the way things are not, as well as the way things are, given his previous expectations. The second one was that it is fun to do "x" or "y", or to learn "a" or "b." I think that children must also discover that learning is a mixture of fun and frustration, elation and tedium, serendipity and sweat. One of our problems, I think, is to get children to keep on wanting to learn after they discover, as I think they must discover, that it is perhaps always rewarding to learn things, but it is surely not always fun to learn them. Third, "I can do such and such." Well, I think sometimes he can't, with his present material or intellectual equipment, and he should somehow maintain hope of being able to do so eventually, when his material equipment changes, and when his mental equipment changes, too. And finally, this business about "people can help." The trouble is they often cannot help. There is a certain sense, I think, in which learning is always intrinsically a private and lonely enterprise. One may no more be able to help the child read, at a certain moment in his reading acquisition, than one can help a colleague solve some scientific problem that is besetting him. I think that these four pieces of meta-knowledge, or beliefs, if you will, are just as real and as necessary for children to acquire as their counterparts, namely the ones that Miss Duckworth has so cogently identified.

The second point, the second important component of her talk, I thought, is that the child himself has the ultimate control over what he learns, when he learns it, and how long the learning process will take. Not to learn something, I think should be regarded as a fifth freedom, really. In any case, it is the one freedom which the typical classroom affords the child. It may be instructive, here, I think, to compare school learning with the process of psychotherapy. Most psychologists, nowadays, regard psychotherapy as essentially a form or a process of learning. However, it may be useful to sort of turn it around, to think of school learning as quite analagous to psychotherapy. A psychotherapist learns that he cannot rush the patient beyond certain limits. He learns that the patient must ultimately do the job himself, that the therapist's own job is to set the circumstances, or to arrange the conditions favorable to change, at the right time and in the right way. I think therapy really is remarkably like school learning; it is remarkably like the process of education, right down to notions analagous to those of "readiness," "the discovery method," "teacher training," "learning by doing."

The final point I would like to stress in Miss Duckworth's talk is her notion that watching oneself learn is an important activity for the

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teacher to engage in. A gentleman in my group this morning described what I thought was an intriguing teacher training program in the area of language arts. His future teachers must themselves learn a foreign language in the school system. These teachers learn first-hand the frustrations and failures and cul-de-sacs and so on which their charges will experience in their own hands later on. Perhaps all teachers should always be in a state of learning, as well as a state of grace. They should always be feeling the process that the students feel. I think that the asymmetry of the teacher-student role is something which we take for granted, but perhaps we shouldn't take it for granted. I had a golfing instructor once who would stand behind me and actually guide the golf stroke, with both of his arms on the club shaft. I suppose the moral is plain, that we should learn to swing with the children we teach.

The one setting that I know where the teachers learn with and through their students is in graduate school--at least the one I'm at. My research assistant learns, I think, by watching me learn, and by learning it with me, both of us together. I empathize with his learning difficulties because I'm sharing those identical difficulties with him. Insofar as I can be said to teach him anything, it is largely teaching by a kind of identification or modeling, or imitative process, rather than by transmitting information in knowledge-peddling fashion from one head to another. Thus, I think that teachers should learn while they are teaching, as well as through, or by, teaching. I think that children should also be used as agents of instruction, perhaps to teach other children according to this same logic, since their role as co-learner is assured, as the teacher's is not, by their actual status in the school situation.

In summary, then, I like the ideas which Miss Duckworth has presented. I think that she, like all of us Piagetian-types, knows the way things are.

Discussion

A. **Wes Sowards, Stanford University, Group 8:**

There were a few people in our group who attributed to Miss Duckworth's comments Skinnerian conceptions of learning; they seemed to suggest that what would follow from taking her seriously would be a highly atomistic approach to the designing of learning experiences. Others in the group didn't hear Miss Duckworth in this way; I am interested in how Miss Duckworth wanted her auditors to hear what she said.

Duckworth: I was kindly given forewarning of this question; in the forewarning, I was given a small bit of information which I would like to have elaborated, I think: namely that Skinner has made a film using the teaching of pendulums to show some prototype of teaching, I gather. I haven't seen this film--perhaps I don't have to be told about what's in it. But I'd like to make some comment about the teaching of pendulums, I guess.

I referred to pendulums, in part, because in reading the report of the Denver conference of the Tri-University project, I noticed that John Holt drew the attention of the company to an article by David Hawkins in Science and Children, called "Messing About in Science" where Hawkins referred to teaching pendulums to a class of children. I was referring to that same class of children in my remarks about pendulums. Hawkins and I did that work together, developing the teaching of pendulums. The way we did it was to use "the-messing-about-in-science" approach. I certainly wasn't intending to be atomistic when I referred to the teaching of pendulums. Specifically, I don't think that one can, in one lesson, or even in three, all of them focused uniquely on the fact that the weight of the pendulum doesn't make any difference, teach that idea. The "belief" has simply got to be incorporated into a great variety of activities dealing with pendulums. I take again the instance of the teacher I was referring to this morning who, having learned that weight doesn't make any difference and having told me so and having been surprised by the conclusion, went, before he did the next experiment, to make sure he had two pendulums of the same weight, thus displaying that his "learning" did not extend to his next experiment. That way of learning is the way that we found learning "happening," time and time again; you simply could not atomistically clock off one thing learned and go on to the next thing learned. On the contrary, learning had to be something much more global, we found.

Sowards: Just let me say one other thing. I don't want to press my next point, and it is not a question to Miss Duckworth. I think, really, there was more to the questions that were raised in our group than meets the eye, more in the arguments over whether we should go for "Skinner," or "non-Skinner," for atomistic or non-atomistic approaches. What really began to reveal itself in our discussions was a long-standing argument among elementary educators as to what the basic point of departure ought to be in building a curriculum, and what one really ought to use in organizing "centers" and "points of entry"--whatever the phrase--which will encourage kids' learning. Part of what was being asked was, "Why magnifying glasses at all?" Or "lenses" or whatever Miss Duckworth was talking about this morning? The alternative proposed was, "Start with the problems-of-life, the real stuff that youngsters face"; had we had a long time to discuss, what we would have probably come around to is this long-standing argument as to how one really goes about building a curriculum in the first place.

B. Dorothy Seaburg, Northern Illinois University, Group 3:

I think that some of the members in our group were concerned with the question that Miss Duckworth raised about the goals of education--as to whether or not we are working primarily toward cognitive or primarily toward affective goals in elementary education. Some people felt that avoiding the word "concept" would mix them up (we have enough trouble anyway, trying to communicate with one another, we change terms very frequently); however, other people in the group liked Duckworth's stress on the word "belief"; traditionally we have been too committed to the idea of verbal acceptance, too concerned with the communication of "things" and the accumulation of "thing." Your use of the word "belief" might free us from looking strictly at "thingness," might help to get us out of the old boxes.

Finally, a question: one member of the group thought that another set of beliefs belonged on the periphery of what you were talking about, a set of beliefs having to do with valuing: "Is it good? Is it valuable?"

Duckworth: I'm still working on that problem. I think that the "it's fun" remarks touch on the realm of values: what things are fun to do. I mean a "value" is "something-that-appeals-to-you," that you do because it seems worth doing. But there is more to the question.

C. Eleanor McMahon, Rhode Island College, Group 11:

Actually, I understand that the writers have free speech; they don't have to précis what the group said so I'm going to take that option. I think that the comments that came from my group primarily are a symptom of the great lack of continuity among educators, linguists, scientists, etc., which typifies this conference and the world of education generally. Let me be more specific. Let me read you the comments which I took down, more or less verbatim, from my group, after Miss Duckworth talked: first of all, someone said that Miss Duckworth's point as to the hierarchy of concepts was worthy of note--that it is important to identify goals and means of reaching them. Then someone said that teachers have a tendency to con kids into believing that the kids are learning what the kids want to learn whereas really it is the Boards of Education--this person was, I think, from California--who determine what is really being learned. Then someone said that we need to have a problem-solving focus, that the Triple A-S program has this, that it focuses on identifying processes, moving away from content.

Then there was another comment, something to the effect that Miss Duckworth's approach was "more or less typical of the approach of people who are moving away from rat experiments and to child experiments"; that we are altogether too specific or atomistic in dealing with children, specific and atomistic while the whole nation, the whole world is blowing up.

That was the nature of the discussion, and I hesitate to use the word discussion in connection with my group. What I have summarized points out one of the real difficulties in our educational program: that we have an essentially eclectic notion of elementary education. If there's one thing that our notion of elementary education is not, it is "elementary." I don't believe that the A.M.A. would have a conference on "What is Medicine?" or the A.L.A. on "What is Law?" but, you know, we're sort of having a conference on "What is Elementary Education?" which is really a broader field than either of those. We've listened to a linguist and a philosopher, and I don't know whether Miss Duckworth is a scientist or a psychologist; the stimuli that are coming in are just tremendous. We just have to assimilate a great deal. I am afraid that most people in elementary education don't have the apparatus to accommodate the variety of stimuli that we are receiving here today, but I would hope that the Tri-University project, by setting up lines of communication between psychologists and educators, between social scientists and educators, will help solve the "disease" of which the character of my group's discussion is a symptom.

D. Judy Craighead, New Orleans, Group 9:

Since the role of "writer" seemed a bit ambiguous, I have attempted to "tell it like it is" from one spectator's limited view of the discussion. In order to simplify reporting my observations, I have divided my comments into three general areas: the format, discussion, and conclusions.

Format: After briefly reviewing Miss Duckworth's main ideas, the chairman then listed her four beliefs related to learning: (1) the "Way Things Are" Belief, (2) the "It's Fun" Belief, (3) the "I Can" Belief, and (4) the "How People Can Help" Belief. He suggested common characteristics of each of these beliefs: they determine action, they can be confirmed or disproven, they show that kids can learn in different ways, and they can be stated without really being believed. There was general agreement with the chairman's basic evaluation.

Discussion: Unfortunately (in my opinion), our first panelist was quite disturbed with Miss Duckworth's attack on the noun aspect of the word concept, and he initiated a lengthy discussion of semantics. Just as I was beginning to despair of hearing all the concepts of concept, there emerged a glimmer of hope. Coming to Miss Duckworth's defense, someone suggested that she objected to "concept terminology" simply because it is too static, too limiting, and too "intellectually barren" to inform the teaching of kids.

Conclusions: Upon the assumption that kids have a natural genius for combining business with pleasure, we as teachers are sure to take the fun out of learning by telling the student what the outcome of his learning will be. Do we want him to remain pinned to his desk like a butterfly while we engage ourselves in knowledge peddling? I think not. Instead, it might prove beneficial if we encouraged his dynamic ignorance by combining a little pleasure with learning. If the "fields of passive minds" have not already been made unfertile by misuse, perhaps we can accomplish the task by continued "concept-sowing." After observing our group actively involved in the learning process, I came to the conclusion that one of the most crucial points Miss Duckworth made is that whether a concept "exists" or "does not exist" is not the important criterion whether someone has learned. Instead, the important issue is what the child has learned and what he believes about his findings. And, if he believes that he has learned something, that it was fun to learn, that he knows he can learn, and that through an exchange of ideas with others he has been able to better formulate his own ideas--then, Teacher, you have done your job well.

E. Miriam Wilt, Temple University, Group 1:

I'm going to take the option of summarizing what I thought I heard in our discussion group.

It seems to me that we're terribly, terribly frightened of this idea of taking children where they are. For a long time we've been educating people to teach in groups; we have been using all kinds of group processes; and as soon as we get to the point that we say that we accept children as they come to us, we begin to become afraid that they will not opt for the things that we think are important. And until young teachers--all teachers, for that matter--can empathize with the child as he comes, accept his language as he brings it, we will not teach the child as an individual and at the level where he is really learning. We know that he has learned his language, the structures of his language when he comes to school; yet, we teach language to him--in many cases, the language which he already knows. If this redundancy is symptomatic, then we should assume that there are many things which have been made a part of "education" which a child will see the need for and learn outside the context of a formal curriculum. The teacher's leadership is tremendously important. Accepting a child unconditionally as he comes means accepting whatever language he brings. The child will go on from there if we're able to establish the kind of environment in which he wants to learn and can learn. What I am concerned about is this question: "How can we train people who will not be so controlled by a false fear that the children whom they teach will not spontaneously choose to learn those things that will help them to live in the society into which they are coming?"

F. Herman Kranzer, Temple University, Group 2:

I was thinking as Eleanor McMahon made her comments "If we think we're in trouble, what about the poor elementary school teacher?" The pressures upon him are constant: the new science, the new Englist, new ideas, new ideas, new ideas, ideas which experts can't "decide" upon ourselves. This seemed to be the crux of the problem--teaching teachers to teach.

G. Nancy Modiano, New York University, Group 6:

We were concerned a good part of the time with the differences between what the teacher would like to do and what the child is doing, between the teacher's objectives and the child's learning. And I think that one of the things that struck much of the group hardest, taking off from Miss Duckworth's talk, was that learning in school should be understood to involve much more than knowing "how the thing is." Education for teachers should be directed toward the goal of bringing teachers to perceive how much more learning is than "knowing how the thing is." We have got to work with teachers to help them see what learning is; in evaluation, we must do much more than we are currently doing--which is just trying to discover how well children have learned, "how the thing is."

H. William Ward, Northwest Regional Educational Laboratory, Portland, Group 10:

It appeared to some of us, or at least to one of the members of my group, that Miss Duckworth was speaking from a particular perspective, a perspective which suggested to her certain specific things about the nature of man, the nature of society, and the nature of the physical world. She spoke as to what are the implications of her perspective for the educating of kids and teachers. It occurred to me that this process of working toward a coherent perspective is a process to which very few teachers have actually subjected themselves. Yet, they daily pick up ideas presented by someone like Miss Duckworth, implement them in the school program, and often implement many ideas which are in conflict with one another. When someone of Miss Duckworth's stature and caliber is making suggestions or recommendations that grow out of her research, she should take some time to speak to the philosophical viewpoint which her activities support. Her doing so would help us to build a kind of rationale for decision-making that we need to have in schools. Placed outside the frame of a coherent perspective, our decision-making becomes random and non-continuous. And this probably gets us into a great deal of difficulty: e. g. we cannot resolve the conflict that we get ourselves into as to how much permisiveness is desirable or how much structure. If we could come to a coherent philosophic position, then any one of us could probably say, "I have the professional decision-making ability to determine what this particular youngster ought to be involved in--i. e. given my understanding of the nature of man, the nature of the physical world, and so forth." But my group did not so much search for a perspective as for a series of flashes of insight as to specific actions which might be undertaken by the schools.

I. Robert Davis, Syracuse University, Group 7:

In general, I think we found Miss Duckworth's speech electrifying--electrifying in that it explained a great deal that had been bothering us. I am looking at her speech as a mathematician. There have been many fights among mathematicians, and between mathematicians and people in psychometrics, which could, I think, be clarified by looking in the direction that the speech points. Altogether too much has been done with "the way things are" beliefs; one just cannot get agreement on the handling of "the way things are" beliefs in the schools because they are not the important part of education. One consideration which Piaget has led us to has been the consideration of "the beliefs that are in the child's head." A quite primitive conception of what science is has caused us to turn away from the "ideas-in-people's-heads" as constituting something which it is not scientific to study, but how can one teach without focusing on the child's conceptions and beliefs? In our group, we tended to feel that the beliefs "It's fun to," "I can," and "Other people can help" are the most important ones; a concern over these objectives has been the root of the fight among mathematicians. In my own experience, it isn't concern over the "way things are" that holds me up; that is comparatively easy to find out in our society, but these other things do hold us up.

The remark that people learn different things from the same experience is certainly right. I've watched professional musicians run over a piece on the piano, do it very quickly, and then say, "All right, now I can do that" and they're satisfied. They learn from doing it once that they can do it. If I play a piece correctly on the piano, I'm scared stiff that that will be the last time I'm ever going to be able to do it correctly. It must have been an accident.

As we explored the idea that the job of the school is to develop beliefs in the "It's fun" area, in the "I can" area, and in the "People can help" area, we heard such remarks as this: "Bright children learn the difference between school and education"; "The college student, on the first day of the semester, gets a lecture on what the course is going to be about, but he doesn't really know until the first mid-term exam, and then he decides the exam is what sets it, and then of course that exam is entirely in the-way-things-are rhetoric, so he quickly learns that that is what counts"; "The student unrest movement, the Peace Corps, that all of this kind of activity represents, in very large part, the response of students who know that Duckworth's last three goals are the important things and that college is nourishing only the first; they, as some of them say, have had it up to here."

Now I'll tell you just one that happened to me. For five years I taught trigonometry at the University of New Hampshire to beginning students who had not had trigonometry, and I tried something; I was hanging around with clinical psychologists. When a student came to me in conference and said, "I can't do this problem" I had a rule; I would not solve the problem. I didn't state the rule in that way to the kids. We would often spend half an hour or three-quarters of an hour going through a charade where the student would say, "I can't do problem 37," and I would say, "All right, why don't you try," and he'd say, "No, you do it and I'll watch," and I'd say, "No, you do it." We spent a lot of time like that, the student would hand me the paper--he would do all of the things the clinical psychologists tell you--he really wanted to hand me the problem. If I said, "Well, you're going to have to start somewhere, why don't you start?", it usually turned out that he hadn't read the problem. Then he'd read the problem, and he'd say, "I can't understand the problem." In every single instance in five years, the student ultimately solved the problem himself, usually after getting mad at me and saying, "Well, you know, if I could have done the problem, I wouldn't have come here." When he was finally faced with the fact that, to get out, he was going to have to solve the problem, he did it.

Duckworth: There are one or two remarks I'd like to make. One is on Mr. Ward's remark that my remarks reflected a view of the world. I think that that is probably true, but I was also thinking of statements of the "goals-for-education" which are often listed by research projects, schools of education, ministries of education; these more and more include such ends as "getting children interested in the world," "developing their confidence," "developing their own resourcefulness and sense of discrimination" as to when to count on somebody else, and when not to. We need do no more than accept those as goals in order to realize that we must then attend to the other three kinds of beliefs that I was referring to: the "it's fun" belief which for me corresponds to developing interest in things; the "I can" belief which corresponds to developing confidence in self; and the "other people can help" belief which corresponds to knowing how to ask for help from other people (as "In what circumstances can they help and in what circumstances can they not?"). If one does subscribe to the notion that education tends to develop the kinds of beliefs I was concerned with, then one must attend to all of them in as much detail as is possible.

One other point I'd like to make--one small point. A couple of people understood my reference to "it's fun" beliefs as meaning "it's fun to learn"; but I intended my reference to "fun" to cover more than learning--to cover any area in which one gets interested. One can also develop the belief "My goodness, it's fun to learn new things." But consider the following: "It's fun to follow the motions of Saturn from night to night, even if I don't learn anything about it; it's not the learning about Saturn that's fun, it's the watching of it." Or, "It's fun to watch little animals whiz around in a drop of pond water, whether or not I learn anything about them, whether or not I learn their names or how they reproduce; it's fun to do that." This sense of "It's fun" does touch on values--what makes you decide "what's worth doing."

J. Unidentified:

We were concerned with Miss Duckworth's excessive use of the word "fun", the extent to which the word itself appears to be a red flag, not only to the clients of the schools, but even to people in the school, particularly to administrators and certain kinds of teachers. The thought occurred to me that since we react in that way to the word "fun," perhaps we ought to look up some word that encompasses all the things that Miss Duckworth wants to encompass with the word "fun." Can we find another word?

K. Dorothy Haupt, Merrill-Palmer Institute, Group 4:

As a teacher of preschool children and trainer of nursery school teachers, I have been increasingly concerned over the emphasis given children's concept development. There appears to be far less concern about the cognitive growth of teachers, their ways of approaching problems, and the possible relation between "cognitive teachers" and "cognitive children." It seemed to me that Miss Duckworth offered the conference participants a remarkable example of the conceptualization process. She was, in fact, offering a model of psycho-cognitive development. Further, the reactions to her presentation raised the question as to whether or not we are truly involved in trying to explain what we think and feel about the teaching-learning process without hiding behind our own formulations and rejecting the formulations of others. Can we learn from others?

I would take issue with Miss Duckworth's undeveloped statement that "learning is fun," "learning to learn is fun," or that "learning to teach is fun." Learning can be deliciously painful, but the fun may come with knowing that one is learning or becoming a "knowing person." While I fully support the belief that teacher and children learn together, I am somewhat troubled by the idea of the adult's learning as children learn. There are many experiences which interest both the child and the adult, but the thinking processes will certainly differ. Miss Duckworth's examples of teachers working with batteries and bells may lead some listeners to project their reactions to this experience on children experiencing this "discovery and learning."

Further discussions seem to be needed on the influence of the cognitive style of family members on a child's style of learning. This may have meaning for the child in his meeting the expectations of the teachers whose style is different.[1] As redundant as it may seem,

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[1] Robert Hess's research as reported in proceedings of the first conference of the Tri-University Project; The Craft of Teaching and the Schooling of Teachers covers this point. Available at Nebraska Curriculum Development Center, U. of Nebraska, Lincoln, Nebraska.

there must be an approach to individual or small group child-teacher interaction which cannot be dismissed with a knowing shrug.

The Role of Language in Learning in the Elementary School

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I want to begin by saying I'm honored, if not at the moment overwhelmed, by an invitation to come all the way from London to what is an American educational conference. I believe myself in talking, in the face-to-face exchange of talk as one of the most productive ways of learning. And, I like to think that since the Dartmouth conference in 1966, something of a trans-Atlantic dialogue has begun to take place - something which will be of value to countries on both sides of the Atlantic.

Part of that trans-Atlantic dialogue was conducted last Easter, when a team of visitors from Illinois came to look at secondary schools in England and Scotland. I recently went through some of the comments they made, unedited, before any report was written, and some of these struck me as extremely interesting. One that I want to mention to you, suggested by more than one of the Illinois observers, was to the effect that in our schools in England, we showed considerable success in getting the younger children in the secondary school - the 11 and 12 year olds - into a working community, but then with the 16 and 17 year olds, we failed to use that working capacity, and resorted to doing all the work ourselves from the teacher's desk.

I think that was a just comment, and I think it reflects the situation in England at the moment, where there exist side by side two traditions; and these two traditions come into conflict with each other. At the moment they are in head-on collision, in the discussions of the proposed new middle schools. It looks as though, ironically enough, we might have two kinds of middle school - one which is effected from the top downwards, and the other which is produced from the bottom upwards; and they'll be quite different. One of these two traditions I would call the "grammar school tradition", the "academic tradition" fathered by the grammar schools with godparents from Oxbridge (Oxford and Cambridge); a tradition that flowers in the pre-university sixth form, but which has met with massive failure in the comprehensive schools in trying to realize a policy of secondary education for all. The other tradition I would call, rather more dubiously, the "infant school tradition." I think the name is justified, although not entirely adequate. This tradition represents the sort of thing that's gone on in the infant schools at home for a very long time, that is making its influence felt upwards and now affects about half of our junior schools, and is moving up to the secondary level. I suppose it would be boasting if I said it affects more than one-tenth of our secondary schools at the present time. The schools we selected for the Illinois team to go to, on their instructions, would be amongst those one-tenth. Since the examination system still supports the academic tradition and affects the top end of the age range, you will get within such schools a collision between these two views, represented by the younger and older age groups in the same schools. Sir Alec Clegg, who is one of our most prominent directors of education, in a television interview last week on the "raising of the school leaving age" contrasted the kind of learning that goes on in junior schools, where the infant school tradition has its hold, and what he called "knowledge peddling." Now, there are more favorable ways of describing the academic tradition than "knowledge peddling"; however, since I am pinning my faith to the other tradition, I let that stand as a means of raising at least a healthy opposition.

If you ask primary school teachers in England to describe what it is they are about, what it is they are setting out to do, I think you may hear some rather vague, and perhaps out-worn terms. "Learning through experience," "activity methods," "discovery methods," "child-centred curriculum," "rich environment," "integrated day," and if you press further and penetrate beyond these rather vague terms, I think you are likely to be given a somewhat homespun philosophy of education derived from actual classroom practice. All I want to say about that at the moment is that it's the very reverse of the too-slick educational theory, which is able to banish all reference to children to the footnote level. I want to make a very brief comment upon practice, not theory, at this stage - the practice in our junior schools at home.

A junior school classroom is likely to be a room full of things, things to look at and to read and talk about, and most of those would have been produced by the children in the school. And also things to do, things to play with, things to work with, things to work on. In most cases the children will be working individually, or in pairs or in threes or fours, and in most cases they will have chosen what it is they are doing. It will be noticeable that they are talking about it all the time they're doing it, to each other or to the teacher. Now, I know one primary school class in London where there are two items on the class time table. One is called "Your time" and the other is called "My time." What I have been describing to you goes on in "Your time." In "My time" the teacher will be explaining and discussing something with the class as a whole, or watching a dramatic improvisation that some group of children is putting on to show to the others, or reading stories or poems to the whole class, or possibly listening to a child telling the rest of the class something that he's done or read or discovered. Cutting across even the two items of that rudimentary timetable will be such activities as going out for walks in the neighbourhood, visiting buildings, encounters with people, doing jobs in the neighbourhood, going out to collect photographs or tape-recordings or samples or to make drawings of something that's outside the school. And then sometimes weeks in the country, or even weeks abroad. Now all that I think is familiar to many of you for several reasons. I want to leave it at that because I do need to have it in the background as a theatre of operations for any campaign which we might get involved in planning together.

Now, for my particular campaign this morning, one arising from a sense that learning depends a great deal upon language. I want to ask, "How do people learn, when there's nobody there to teach them?" I ask this, not as a subversive plot to get rid of teachers, but to find out something about learning. "How do people learn, when there's nobody there to teach them?" My primary answer is, "by talking." If you want concrete evidence of this, perhaps this conference itself might serve as an example.

But let's take it slowly. Our view of learning depends upon our view of language. Our view of language depends upon our view of man. I take as my very general starting point a quotation from the philosopher Ernst Cassirer:

> Reason is a very inadequate term with which to comprehend the forms of man's cultural life in all their richness and variety. But all these forms are symbolic forms. Hence, instead of defining man as "animal rationale" we should define him as "animal symbolicum." By so doing, we can designate his specific difference, and we can understand the new way open to man - the way to civilization.

That has spread the canvas pretty wide. My job now is to narrow it. Putting it very crudely, oversimplifying Cassirer's view, let us say that we act in the real world by means of a representation. We construct a representation of the world for ourselves, and we act in the real world via that representation. What is happening, happens even while we react to it, and is lost, but the representation goes on. And we may work upon it. By that means, we gain a retrospect, and prophesying on the basis of that retrospect, we gain also a prospect. You may remember that Yeats said, not of man, but of animals, "Nor dread, nor hope attend a dying animal." Man, on the other hand, creates a prospect and a retrospect by symbolising experience to himself.

Now what I've just said is one way of interpreting human behaviour. As such, it is an example of itself. It constitutes one way of representing human behaviour, and there are other ways. Again, staying at the crude level, if I make a map of a district I'm staying in, I am, very briefly, representing my experiences of the countryside. But I might also be seen to be setting forth the expectations I should entertain of this countryside when next I visit it, and by which I shall travel intelligently in the area. Now, if you make that even cruder, by supposing that that map is in my mind, and by supposing that I modify it in the light of what I find continually, then you have a very rough picture of the theory of representation, the theory by which Cassirer calls man, animal symbolicum. My representation of the world differs from yours, not only because experience uses us differently, but also because my way of representing what happens to us is different from your way of representing it. I am not a camera. I partly act in the way a camera does, because my representation reflects what is in the outside world, to some degree. There is a drawing in, as a camera does, an introjection of what is outside. But there is also my way of representing it, which is different from yours. And that is not an introjection but a projection. If you can imagine a screen upon which is drawn a representation of the outside world, but the picture is a result not simply of what is drawn in, but also of what is projected. My way of representing the world, reflects, in other words, my inner self, my feelings, and so on.

We construct each our own representation of the world, but we work upon each other's. The fact that a representation has duration in time not only enables us to work upon it ourselves, but also to have other people work upon it. Martin Buber, the Israeli educationist, lecturing in London many years ago, took as his text, "Experience comes to man as 'I', but it is by experience as 'We' that he builds the common world in which he lives."

Secondly, we improvise upon our representation. We can do that with a strict eye upon prediction, as we might do if we talked to a man whose job we were going to take over - finding out what the job was like, casing the joint, with a very keen eye upon prediction. Or we may improvise freely, wildly, light-heartedly, with no concern for what our improvisation has to say about actuality. One simple example of that is the child who delights to think that all the earth might be paper and all the sea might be ink.

Experience comes to the small boy as "I," but what he makes of it is very much affected by what his mother says when he tells her all about it. And so I've come at last to language, and it's time I did. Some of you may also suspect I am now going to quote Sapir. Having arrived at language, what better linguist to illustrate the point I'm after than Edward Sapir, the father of American linguistics, the father perhaps of modern linguistics? Edward Sapir says, "The primary function of language is generally said to be communication." But he demurs at this, and goes on to say, "It is best to admit that language is primarily a focal actualization of the tendency to see realities symbolically." And he gives a gloss on that elsewhere, "an actualization in terms of vocal expression of a tendency to master reality, not by direct and ad hoc handling of this element, but by the reduction of experience to familiar form." So language, Sapir says, is one way among others of representing the experienced world. But it is a key way. And here I want to draw, not only upon the ideas of Sapir but also upon the work of the Russian psychologists, Vygotsky and Luria. Although language is only one way of representing experience, it is a key way of doing so. It is, to put it very simply, the most explicit way. You can't imagine in fact any better way of following unseen events than listening to a running commentary in words, because language relates to events in an explicit, direct fashion.

Now, language gains this power because of its own complex internal organization. Putting the matter very briefly language is, in the first place, a means of classifying. I'm sure many of you will be familiar with Bruner's classic example of the need to classify in language, when he points out there are seven million distinguishable colours. If you take everything into consideration, shade and density and so on, there are seven million occasions upon which the human eye can indicate "this is different from that." And yet we cover our colour business of the day mainly in terms of seven or eight quite simple words. We've classified thousands of distinguishable phenomena into each of those huge categories. These are not the only categories language has, however, these categories of synonymity. It also has hierarchical categories, which a child learns quite early. For the young child, buttercup and flower are at first two names for the same thing. But quite early, it becomes clear that flower is hierarchically at a different level from buttercup; that both buttercups and daisies (although they're not daisies and buttercups) are both flowers. Then there is the relation of oppositeness, which we also learn very early in language. Light and dark, and light and heavy. Such pairs are not random associations, they are a part of the structure of language. We use them systematically: so that I may ordinarily ask, "How heavy is your suitcase?" but I don't ordinarily ask, "How light is your suitcase?" The words light and heavy are a pair, operating according to rules. And then, of course, there are the grammatical relations, in which, by formal distinctions in language, we can reflect some of the forms that we perceive or conceive of in our experiences. So, summing that up, language provides us with a grid, and we place this grid upon experience in order to reduce its irreducible nature, in order to make order out of the uniqueness of every phenomenon.

All our experience is so saturated with verbalism that we find it difficult to stand back from language and see it operating. Let me, therefore, take a very crude example. Here is a 9 year old girl in a Yorkshire school, a girl called Christine, writing about her family:

> My Brothers
>
> My brothers names are called Bert and John. On Monday my brother Bert was watching Wagon Train on the television. My brothers are I are off school with very bad colds. While Bert was watching the television, he had a tiddlywink in his hand, and he put it up his nose. Bert came across to mummy and told her what he'd done, and my mummy tried to reach it with her tweezers, but my brother was scared, and he sniffed, and the tiddlywink vanished out of sight. Daddy was putting his coat on by this time to take Bert to our doctor, who's called Dr. Fine. I was scared, and I cried, because I thought it might do some harm. My brother John just sat there watching TV. Besides, it was my tiddlywink out of my game. Doctor Fine got it out with tweezers. He came home all right, still I never got my tiddlywink.

I think the miracle by which we can get into the mind of a small child a long way away is difficult for us to comment upon, but at the crude level, I think we can feel the shape of that experience - the tug of war between the good little girl who cares about her brother, and the understandable little girl who cares about her tiddlywink. I am not suggesting that this is evidence that that child has perceived the shape. I want to suggest more than that. That this is, in fact, the act of perceiving the shape for her. The shape was perceived, as far as she will perceive it, as she wrote those words.

We use language, then, to structure experience, to give shape to experience. I like "structure" better than "give shape," because structure as a noun has two senses; it means the shape we find in things, and also the shape we give to things. And I want those two uses to be imported into the verb. When I say "we structure experience," I want that to refer both to the shape we give and the shape we find. These are, as you'll see, the processes of projection and introjection, which I started with.

Linguists sometimes distinguish two general categories of speech, the first being speech used as an exchangeable component of behaviour, one of the counters of behaviour. If I say to you, "Lend me a dollar," (to take an example from Sapir) you may reply by action, or action and words, or words. And, in any case, structurally (not functionally, because I may in one case have the dollar and not in the other), structurally the various kinds of response are similar. Language and action are substituting for each other. The other category is one that is sometimes called "displaced speech," and this is language used to go back over the event, and tell about it in the way I've told about it. In both these cases, we structure experience. We use language to marshall our energies, our attentions, to structure the situation, as we act in the situation. But it is a typical use of language and the one which I want to put the stress on, that we also structure experience by using language to go back over it.

Having said that, I want to make yet another and different distinction. Imagine a party. And the party is over. And you're discussing the behaviour of the guests, in order to try and work out who it might have been who lost a piece of jewelry in one of the chairs. You're doing something useful. You're taking part, in a very general way, in the world's work. I want to call that "participating" and your talk, language in the role of participant. But I'm sure you'll find as you do this that the talk drifts into another vein. You begin to discuss the behaviour of the guests in order to enjoy their behaviour, and to savour it in a way you couldn't when they were actually behaving. Now, this is not being useful to anybody, but it's very enjoyable. This I want to call language in the role of spectator. You are not now participating in the world's work in any way, you are in the role of spectator, going back over past experience. I may go back over my experience, either as participant or as spectator. I may tell you what has been happening to me in order to work up to asking you to lend me a dollar. If that is so, I am pursuing my own ends, and this is part of the world's work. I am a participant. Again, I may go back over my experiences in order to influence your decision about your own affairs. If action and decision are involved in it, that is participation. But I may go back over my experiences to enjoy them again and to invite you to enjoy them with me. And in that case, I'm in the role of spectator, and you, in responding to me, are also in the role of spectator - spectator of my past experience.

Let me illustrate this with a very fine point. You may take it or leave it. If it isn't helpful, leave it. A six year old, in an infant school, took a piece of brown chalk to his drawing book and scribbled all over one page very vigorously. And then at the bottom he wrote,

"Exploring the rocks,
a place called Cromer" - (that's a very well know seaside holiday place)

- "Exploring the rocks
  a place called Cromer
  I knocked the loose lumps of mud."

Well, the teacher liked that. But she liked it better when she had made a few "improvements" - just very small improvements, with her red pen. It became "Exploring the rocks *at* a place called Cromer, I knocked the loose lumps of mud." Now, the fine point I want to make is to suggest that what the boy was really doing with his words was exactly what he was doing with his chalk. He was going back in order to gloat over his holiday, to enjoy it, and insofar as the teacher was concerned, it was saying to the teacher, "Here you are, you can share this pleasure with me." What the teacher made it into, was a piece of information. The boy then told anybody who wished to read it this piece of information about his holiday. In other words, as a way of *informing,* this was language in a participant role, whereas it had been written in a spectator role.

You will notice that we have seen people taking up the role of spectator of *other people's* lives, something we habitually do, whenever we gossip to people, and also whenever *we read fiction*. We become spectators of other men's lives. We do this habitually, for fun: to gloat over an experience, to extend our experience, to speculate upon the shapes experience could take. We do it for fun, which means because we never cease to long for more lives than the one we've got. As participants we have one life to live; as spectators, an infinite number is open to us.

But we also do it for a different reason. And here I want to go back to the structuring process. You build your internal picture of the world and as you move to new experiences, you have to modify it in the light of the changes you encounter. If the changes are not too great, if what happens is not too unexpected, you will adjust in your stride. But if what happens is unexpected beyond a certain degree, either pleasantly or unpleasantly, then you may not be able to adjust in your stride. You have to participate as best you can because events don't wait for you. And when it is over, you are left in a state of mental indigestion. You *need* then to go back over the experience, in some form or other, in order to come to terms with it. We may do this in thinking, but nine times out of ten, at some stage or other, if we are able to, we do it in talking. And, of course, we sometimes do it in writing. Piaget shows that children use their make-believe play for a similar purpose. They go back over experiences which seem too difficult to accept, and play through them. Part of the play is talk about their experiences, of the kind I have been describing, talk in the role of spectator. Piaget calls this play a "dominance of assimilation over accommodation." Now in my cruder terms, this is simply a "domination of projection over introjection." In going back over events in order to come to terms with them, we are stressing our own inner need to project, to make the picture in the light of our own desires, what we can accept; and understressing the actuality of what was there.

To be in the role of spectator as opposed to participant is to be free from the need to act and to decide. I want now to suggest two ways in which, as spectators, we use the freedom given to us. We use it, in the first place, to attend to the forms of the language. And that means the linguistic forms themselves, the sounds, the rhythms, the structures. But also, the form of the events represented, and this is particularly important to us, of course, in the stories we tell and the stories we read. And thirdly, and perhaps most important, the form of the feelings, the patterns of feelings embodied and expressed. In participant situations, feeling usually moves directly into action - it either sparks off action, or is eked out in anxiety. But, as spectators, we are free to savour it as feeling. And however miserable, or even threatening, or frightening your day's adventure may have been, you will enjoy those hairbreadth escapes in talking about them afterwards - in a way you certainly could not while you were a participant. Children respond to the sounds of language, the audible forms of language; a nice story was told at Dartmouth of the conference of psychologists, at the end of which one member was collected by his wife and small child. The small child danced through the room chanting to himself, "maximum capacity, maximum capacity." That they could also appreciate the shape of events at a quite early age is illustrated by the three year old who called Cinderella "a bit sad book about two ugly sisters and the girl they were ugly to."

Attention to forms then is one way in which we use this freedom. Secondly, we use it in order to evaluate experiences more amply than we are able to do as participants. We evaluate the situations that we participate in, and we act in the light of our evaluation. But we tend to do so under the urgency of practical necessity. As spectators, we are free to refer more fully, to a broader frame of reference. D. W. Harding, the English psychologist, has put this point. I quote his words: "Detached and distanced evaluation is sometimes sharper for avoiding the blurrings and bufferings that participant action brings. And the spectator often sees the event in a broader context than the participant can tolerate." And his conclusion to that is, "to obliterate the effects on the man of the occasions on which he was an onlooker, would be profoundly to alter his outlook and values."

Speech in the role of spectator then, may be make-believe play, improvised drama, drama (in which the speech has brought with it the action in which it originally took place, or is supposed to have taken place). When it is not so imbedded, I don't know what to call it: the nearest I can get to it is the word "gossip." We have done so little work on the social and educational functions of speech that we have no terms by which to distinguish good speech, desirable speech, from undesirable speech, and so on. When we go back over events, talking in the role of spectator, I want to call that "gossip," but using the word in a somewhat broader sense than normally, and intending a kind of talk that is not usually malicious. When we come to the written language in the role of spectator, I want to call that "literature." This is to define literature in an unusual way, a non-normative way. In most of our definitions of literature we have to think of things being good enough to be literature, and so something which is not good enough to be literature, is something else, but what it is nobody ever says. If I define literature as the written language in the role of spectator, this enables me to talk about the literature children write, as well as the literature children read. And those of you who have your university courses still fresh in mind, may take the point that it enables us to treat literature as something we do, not simply something other people have done. So what poets write (taking poets just for the moment to stand for literature more generally), what poets write, and what children write perform a similar function. Their writings are valid for the same reason. They are both adjustments to, improvisations upon the writer's representation of the world. But now bring the reader in. When the reader reads what somebody else has written in the role of spectator, he has to make his adjustments to his own experience, his improvisations upon his own experience. And he does so in the terms that the writer has laid down. When I read what a child writes, I am less likely to find myself adjusting sharply my own experiences, than I am when I read what a poet writes. In other words, a child's poem is valid for the same reason as a poet's, but is less influential than a poet's poem. I want very briefly to add a word on this. The pattern of attitudes, beliefs, ways of feeling and behaving that forms an important part of our pattern of culture, has been derived, above all, from the adjustments to experience, the improvisations upon their representations, made by the most sensitive adjustors in our society - by the artists. (We are talking of literature, so I'm thinking of the poets and the novelists, but it's obviously broader than this.) Our pattern of culture is in part derived from their adjustments and responses, but then only when we have given currency to those adjustments by our response to their works. And that's a very hurried way of saying that language in the role of spectator has a highly important cultural and educational function to perform.

Let us now turn to the way a young child acquires language. If we can form some conception of the purposes his language serves before he comes to school, we shall have surely the best starting point for anything we want to say about language in school. Listening comes first, but don't let us think of this as mere exposure. It is highly active and directed listening. The child is no more a pick-up than he is a camera. His first speaking is derived from the conversational exchange he has heard going on around him. He tends to say, in a situation, what has been said by somebody else in that situation. Thus, it is social interchange that he learns first. But very soon, as Vygotsky points out, he comes to use this social speech also for another purpose while at the same time going on developing his power to converse. He begins to use language, then, as a kind of running commentary on what he is doing, and this continues whether anyone is listening or not. Vygotsky calls this "speech for oneself," and shows how, as this is established, language begins to develop in two different forms. The social speech becomes more complex, more adequate. The speech for oneself becomes, first, more abbreviated: after all, if you're speaking for your own purposes, you don't need to tell yourself so much about it, you can leave the subject out, and maybe even leave part of the predicate out too and so on. Secondly, it becomes "individuated," using words with special, private meanings. Finally, Vygotsky suggests that at about the age of six or seven, this abbreviated speech for oneself becomes internalised, silent. Further, that it is in fact going on still, in us, as verbal thinking. There is, of course, plenty of evidence to connect intelligence in its widest sense, in later life, with talking experience in infancy.

A child learns to speak not simply by imitation, but again (using this favourite word of mine) by improvisation. It soon becomes clear that he is applying a system. He doesn't know a system exists, and he's certainly never tried to learn it. But he is, in fact, acquiring it in the course of his speaking - a fact we can deduce by the errors he makes in applying it. I heard a small girl once say to her mother, "We better cross here, bettern't we?" If you know your Chomsky, you'll know that the transformations by which you derive that negative tag of "bettern't we," are very, very complex. Well, the child's got them dead right: it just happens that "better" isn't the kind of word that ought to be submitted to that particular transformation.

In the first year of speaking, speech remains mainly tied to the here and now; language about things present or actions going on. Then the child discovers the possibility of using words about things not present. And this is a tremendous extension of his powers to explore the world in language. He can then use what the Russians call "narrative speech," which is going back over experiences, shaping them, interpreting them. And "planning speech," which is putting the narrative into the future. And the Russians suggest that the child's ability to say what he is going to do is some influence in helping him to overcome distractions, and in fact, complete the plan. So there seems to be an important interpretative role in narrative speech, and an additional role, a regulatory role, in planning speech. To put this another way: when a child uses words instead of things, and not simply as attributes of things, he is able to place new experience alongside the old and familiar and so relate it, accommodate to it, understand it.

Two allied purposes are served by language at this pre-school stage. First of all, it serves the child's curiosity. Here I need to digress a little in order to talk about George Kelly. George Kelly is an American psychologist who fires me a good deal, but I don't find him talked about very much in educational circles. It seems to me that George Kelly's Psychology of Personal Constructs gives us the ideal background for all I've wanted to say, and a great deal more that educators talk about. His conception that man is, above all, a predictor, that he generates expectations, puts them to the test, and modifies them in the light of what happens - this gives us a model of man which makes all behaviour, basically, similar to learning behaviour. If throughout our waking lives we actively generate expectations, it is as though we were transmitting a carrier wave, and as though incoming messages were modulations of that carrier wave when it meets the outside world. This is an active conception of living and learning. I have digressed, but not as fully perhaps as is necessary. Let me leave that as a matter for discussion. Meanwhile, I bring the point in now to explain that I assume the young child in ordinary circumstances is a curious animal; that it has curiosity, and that if language serves that curiosity, it will be felt by the child to be serving his purposes.

Secondly, obviously, a child uses language to buildup relations with the rest of his family. And since the family is the whole theatre of operations for him, greater participation in the activities of the family provides a basic incentive for him.

When the child comes to school, it seems to me the least we can do is to make sure that his language goes on doing for him what it has done so far: and at all costs avoid anything in our behaviour which would bring discredit in his own eyes, in his own ears, upon his own speech. So the first important thing to decide about school is that the talk must go on. (I think future generations will condemn our system for this more than for anything else, that knowing something about the importance of talk, we nevertheless organize our timetable in such a way that we banish it into the crannies between other items.)

Further, talking and doing must go on together. Speech rooted in the here-and-now is still an important aspect of language development. If language is to have value as currency later on in handling second hand experience, secondary experience, it must, in these early stages, grow very firm roots in first hand experience: which means that talking and doing will be closely interlocked. I think the temptation to neglect this necessity is greatest in what is sometimes miscalled a knowledge subject. We have to bear in mind here that a child must formulate from bits of his own environment, in order to generate the hypothesis by which he can make something of what we can tell him. What we know, as has been pointed out, is often a great help to the child, and we must therefore tell him in the right circumstances; the right circumstances include that what we can give him fits into a framework that is already there for it. That framework consists of appropriate "expectations," and the generating of the expectations begins with the child trying to make something of what is there for him in the environment.

I think writing begins with what Sapir called the "expressive use of language," the verbal expression of the writer's own awareness - a kind of self verbalizing. But under different kinds of pressure, it moves out from that central position near to the self, either on the one hand to referential writing in the role of participant, or to poetic writing in the role of spectator. And I think that most of what we get in the elementary school is, in fact, still transitional, still in the course of moving from the expressive towards the referential and towards the poetic. A great deal of learning is inhibited by teachers who don't know that if they cut off those expressive roots of language, they are short-circuiting the learning process.

A child's expressive, poetic writing in school leads on to literature. After all, if we define it as I have done, they are parts of one activity; the writing and the reading are there for the same reason. But of course this may not work. It may not work, because of the existence of sub-cultures, groups so culturally different from what it is we are offering in the way of written literature, that no contact can be made. I think, then, a teacher simply has to build up his own repertoire of what the children shall read, and it will be derived from what they have written, what other children have written, and from what people in their own group write. And as time goes on, he will hope to bring into this something from the wider context, the wider spectrum, where it is nearest to what is already built up there in the repertoire. This is becoming a more acute problem in England, but I can't claim it's a new one. I was very interested to find reference to it in a writing by Dover Wilson. You may know Dover Wilson as a Shakespearean critic - he certainly was a "literary gent," but he was also an Inspector of Schools. In 1921 he was criticizing another "literary gent" who was also an Inspector of Schools, Matthew Arnold, and he attacked Matthew Arnold's view of literature in these words: "Culture is not a hot house growth, an exotic plant, from which cuttings may be taken for the window boxes and back gardens of the less fortunate. Culture means cultivation - cultivation of the common soil of the human spirit, and the flower and fruit which spring from it grow naturally from that soil." This indicates a long term objective, raises all kinds of difficulties I can't solve, but that it's facing in the right direction, I have no doubt.

Surveying these activities, then, how do we select, how do we plan? You've heard it said a thousand times that children's interests must be the arbiter. Let's take a brief look at that. D.O. Hebb, the Canadian psychologist, has pointed out that what attracts our attention is likely to be something which has a familiar element, and an unfamiliar element. Piaget, in a very much narrower context, looking at what a small baby will imitate, finds that they will tend to imitate actions which have something familiar about them, and something unfamiliar about them. So what straddles the familiar and the unfamiliar will tend to attract attention. If we look at interests in that way, it is what can interest a child that concerns us and the restriction is on starting points, but not on destinations. The first implication is that teachers must have the freedom to choose how they structure the environment for the children, what materials they bring in. And the second implication is that teachers must use that freedom to give children the freedom to choose amongst what is provided. Teaching is not laying siege and battering away from the outside; you must have a traitor within the gates who will open the door. (Herbert Kohl showed this magnificently in his Teaching the Unteachable.) If learning means going through a door, the door is only opened from the inside. And once it's opened, we depend upon the effectiveness of the learning processes in the child's own view. It is encouraging to think what a massive task an infant has accomplished when he has learned to speak. As I say, the family is the whole theatre of operations for the child, so that fuller participation in family affairs brings with it the whole "satisfaction of progress." Similarly, the use of language in school can bring this sense of satisfaction. It enters in to organize so many other kinds of activity, from the most mechanical manipulation of things to the making of myths: language spreads out the elements and enables us to make our own way with them. It is a cumulative process, a geometric progression. If we can get it started, the increase is rapid enough in most cases to give the child the sense that this learning process is worth opening the door for.

But of course there are problems in getting it started, because we're not always dealing with children who've come from ordinary situations. Ordinary curiosity may have been blunted, and apathy set in, or perhaps apathy sets in towards the school and what the teachers are interested in. Again, Herbert Kohl shows magnificently that it can be a tough job, but you can work for, and get, the breakthrough. And alternative theories based upon a body of knowledge and sufficient incentives, positive and negative, to get the body of knowledge learned, just don't hold water for me in this sort of situation. We can get away with them elsewhere because they can act as a priming of the pump, but they're just simply non-starters here. A body of knowledge is only of value as a frame of reference, a frame of reference is only of use to anybody if, in fact, he refers, if a process of referring goes on. And the process of referring only goes on if there is some activity afoot which demands the reference.

All I've said has implication for training because if we want teachers to educate children in this way, we have to educate teachers in this way also. I want to say a very little about training, and very briefly. A student teachers has two massive jobs on hand. The first is practical; he has to find his own way as a teacher, his own role, his own personality. Teachers, as you know, above all, have to be themselves. And the student has to find himself in order to be himself. This may involve a great deal of experiment, a great deal of patience on the part of those around him, a great deal of anxiety sometimes on his part. The second job is to put in some hard thinking and serious study. If we put before him material which has no intellectual challenge, we lose out from the start. But my main point is to say these two tasks must be made one. He is not able to tackle educational theories until he has experience of educational practice, the confrontation of the classroom. He has to structure his environment, to make his own hypotheses, in order to match them up against the educational theories that people like ourselves proliferate.

I think all teachers need to know about language as a means of learning, as one of the things they understand about children. I think the college community must teach them this. Our own teaching must be mainly by talking, and the talking must not all be too studious, it must fringe off into more relaxed and more social talking. And it must fringe off also into active talking and doing, where the groups that have been talking with you will undertake some joint enterprise which brings other kinds of talking into play. The writing we ask for must be not only studious, but also personal. We need an openness between the generations, which comes when personal talking and writing are a part of the climate in which we live. And we need an environment of artifacts, just as the children had in the primary schools - to be surrounded with things that the children have produced, that we have produced, that the students have produced, seen in the same context.

I think teacher training has often suffered in the past by not having the right relations between the two branches of the profession. Students are tenants of our lasting relations with teachers in schools, and if we fail with the teachers, we fail with the students. I believe that the further education of experienced teachers ought to be closely related with the initial training of student teachers, because I believe the teaching situation, when it is rightly handled, becomes a way of setting up warm and egalitarian relationships, and not a way of inhibiting them. If I may be permitted to say so, I think it is difficult for the right relations to exist if teacher educators and teachers come through different routes, or from different stables. Where this is so, I think you need boxing and coxing. I think the educator of teachers needs the daily confrontation in the classroom, in order to have some things in his blood which can't be got by any other means; and in order to see educational perspectives from that viewpoint.

And that leads me to my very last point, which is to revert to language. And this is a disclaimer, if you like. There always will be a gap between anything we can formulate in language and the actuality of any situation. Eleanor Duckworth showed us this morning that there's a gap, there's a difference between believing and stating. There's a difference between response to a situation, and any formulation we might make of that situation in language. Confrontation involves responses we could not formulate, so that Piaget spoke of the present moment as "the manifold and irreducible present." If a sense of touch can be taken as an image of the fully sensitive response to a confrontation, then language is like the bones of the hand. It is the bones of the hand, and the arm and the body, which enable touch to be delicately and deliberately applied. But touch is always far more than the impact of bone.

What I've been doing this morning is what I've found myself doing increasingly in recent years - trying to explain to myself what it is I feel and believe about language, and about children, and about learning. In this respect, it is the homespun philosophy, or the counterpart of the homespun philosophy I began with. And it is important, in thinking about language and learning, finally to come up against this disclaimer. Formulating a belief into a policy, and then acting on the formulation, may mean that we hide behind our formulation, and so refuse the responsibility that the actual confrontation presents. I have a magnificent, but long, quotation from George Kelly which puts that point rather better, but you've had to take my brief word in place of his.

Critique

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I begin on a note of inspiration; I will be brief. "To be concerned with language, as it is used by living people, is to bring us to the heart of things human. Try, if you will, to think of human existence bereft of speech. Imagine this world, within the next ten minutes, rendered dumb and mute and wordless. Without language, life suddenly takes on a humanless garb. Without language, written and spoken, the silence of the day would be broken only by shadowy forms, primitive cries and grunts, the sounds of the winds and the waves, the rustle and murmur of moving things. Language is the unique ingredient in man. For where it does not exist, there abides little that is human." That statement was made by Irving Lee, not by Jimmy Britton; the statement seems to me to sum up the spirit of Mr. Britton's remarks. There was, in Mr. Britton's remarks, a pervading sense of the humane--a call to all of us who work with children, to lift language to the place where the lives of the young are really enlarged by the language which they hear and are encouraged to use. It is clear that Mr. Britton does not believe that all of our efforts in the past have been enlarging ones. Obviously, he regards some of what we do as pretty constricting.

What does Professor Britton regard as enlarging? And what constricting? Let me make a representation of his position before I comment upon it.

Certainly, Mr. Britton has strong views about the constricting qualities of "knowledge peddling"; given his British and academic background, that might have come as a shock to me (as it may have come as a shock to you today) had I not read John Dixon's report on the Dartmouth Seminar last summer. That seminar gathered together about fifty Americans and Britishers, including Professor Britton, all of them concerned in one way or another, with the teaching of English. That report reveals that the treatment of the mother tongue is neither in the British nor in the American classroom what it once was. I quote from the report:

> With regard to knowledge, the two delegations /̄i.e. those from the U.S. and those from Great Britain_/ passed each other in mid-Atlantic, as Nelson Francis remarked. In the United Kingdom a break away from the constrictions of

> the traditional has recently given new emphasis to experience, and to the operational use of language to handle, order, and to come to terms with it. After the initial shock of hearing this from British lips, there was some United States sympathy with this view. Increasingly in the United States there have been danger signs of examinations shaping courses of study, college board examinations, standardized examinations given regularly throughout the school, advanced placement tests for the able, and now the threat of a national assessment. On the other hand, the prevailing American concern seems to be with the danger at the other extreme of a chaotic approach to operational English, associated with a child-centered curriculum--in which the major concern is social adjustment, and not a child's growth in intellectual, imaginative and linguistic power." (Growth Through English, p. 72.)

Now that puts the issue squarely. I'm confident that the issue did not escape your attention in your several groups. The issue is all the sharper because we have just finished one stage in a nation-wide re-examination of the English curriculum in this country through the various Projects English. In general, that re-examination seemed to conclude, in my judgment, that more knowledge peddling was in order, not less. The curricular plans of the Projects English and related projects have yet to be tested in any comprehensive way in our schools; I suppose that we must wonder if we are ready to reject them before they have been tried. Perhaps I should put the question in another way: "Can we find some middle way, which permits us to retain a genuine concern for the personal and social adjustment of children while we also retain a devotion to English as a discipline?" Perhaps the rapprochement can be achieved if we take Professor Britton's view of language seriously. You will remember that Professor Britton asserts that we use language to represent reality to ourselves and that this representation provides both for a looking back on an experience and a looking forward--a retrospect and a prospect. In looking forward, we may wish to predict future events in the outer world (in that case we attend closely to what has been introjected by the outer world). Or we may not wish to be confined by what is likely to occur in the outer world; in that case, we do not attend as closely to what has been introjected but, instead, we project our own fancies upon an imaginary outer world, expecting no outcome in the "real" outer world. We are affected, Britton said, in all of our efforts at representation by other people; what other people say and do modulates or forms the linguistic shapes which we give to experience. In all of our structuring and symbolizing of experience language is the tool which permits us to give order to experience--e.g. to classify phenomena. Language also facilitates the systematizing of relationships among classified phenomena and as we employ language to represent, classify, and systematize experience, we may play in one of two roles. We may operate on reality in the participant role, or we may operate on the language in the spectator role: the participant role is pragmatic, whether the language is concerned with present or future action. The aim is to do something or to enlist support for doing something. The spectator role is primarily non-pragmatic: the aim is to savor, to enjoy, to reconcile, or to understand, but no action or decision about action is expected. The spectator role attends first to forms; to the patterns of events; to the forms of language, including its sounds; to the pattern of feelings that render an evaluation of the forms.

What are the educational implications of Professor Britton's view of language?

Let us begin with the infant in his family: an infant listens, he says, actively and with direction; he begins to speak in conversational interchange with his family, and then he extends his speaking as a kind of running commentary on what he's doing, without concern for the response he receives (this form of speech indicates that he is working with operating "a linguistic system", and not just imitating).[1] He quickly extends his commentary to past and future events, but first in a participant role; he may then adjust the linguistic constructs concerning the past and future which were originally built up through experience by means of later spectator activity--make-believe play and story telling. Thus, at the pre-school level, linguistic activity structures experience for the child in practical and contemplative contexts and establishes his various social relationships, especially those with his family.

The child moves to school: in the school, the opportunities for talking and doing, centered on the here and now, must, in Mr. Britton's view, be stressed: first hand experience in school must provide the primary impetus to talk, and the teacher's effort to develop the child's capacity for talk should build upon this first hand experience. The talk should also build up in the group its sense of social relationship--its sense that it is a group. The child's exploration of do with language in both the participant and in the spectator role can be encouraged by bringing to the child meaningful first-hand experience.

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[1] Editor's note: the distinction made here is reflected in the differing views of language-learning set forth by Chomsky and Skinner. Cf. Ruth Weir, Language in the Crib.

The child begins to write: when he begins to write, will be usually neither purely participant nor purely spectator; he will wish to be, in most of his writing, something between the two--expressive in Sapir's phrase--partially interested in experience and partially interested in his own language.

The child begins to read: reading is or should be, like listening, an active and directed process. That is, the child has expectations about events and about language and he modifies both sets of expectations in the light of what he reads and his experience of the reading act (I take it that this predictive work which the child does when he reads, this anticipation of what the language read will be or what the events described will be, can be anticipation either in the role of participant, and hence, pragmatic, or in the role of spectator, and hence, non-pragmatic). Of course, the child may not be engaged at all by what he reads and in that case, nothing happens. One way to engage the child trying to learn to read, when the cultural differences which separate him from the culture of the middle or dominant classes are sharp, is to use what students have written, or what others from their cultural group have written as the "material-to-be-read," aiming always toward obtaining from the children an increasingly broad spectrum of reading material.

To engage the child is to employ his interests, using the familiar to begin with and working toward the unfamiliar. Given all of language and what we know of children, we may take courage from the way a child normally learns language as he participates in family life. The normal in the family's development of a child's language does not always happen; then the progress which a child should know before he comes to school is replaced by failure at home and by the certainty of failure in school, whatever the handling of the mother tongue in the classroom. In that case, the first job in language teaching is to overcome the child's sense of being doomed and to accept, as Miriam Wilt and others have also said, to accept the youngster with his assets, however intractable those assets, to accept them fully. I have made this attempt to re-represent Mr. Britton's point of view about language in the classroom in order to tell you how I have understood him so that I might respond having specified what I understood to be the position to which I am responding. Of course, I may not have understood him.

Now, for me: I do not doubt that the schools need to care more about language, specifically about talk; Mr. Britton's phrase, "Talk is tucked in between the nooks and crannies of the curriculum," is an apt one. Talk, in our elementary schools, has always been an underprized activity. And I do not think that I could quarrel with Mr. Britton's representation of the importance of the structuring and symbolizing powers of language or with his distinction between the participant role and the spectator role in using language and many of the implications which he drew out of that distinction.

Where do I quarrel then? My need for further discussion begins when I consider his urging of the necessity of direct experience as the basis for the development of a child's capacity to manage the language. I do not believe that direct experience bears an omnipresent relationship to language development in children; I need to know more about the boundaries and the proportions. I need to know "What was the repertoire of experience brought to the school by the children and how much we can use of this experience?" I need to know more about the requirement that talk begin with direct experience as it bears on the changing maturities of children; I need to know more about direct experience and the new technologies of communication. The very symbolizing and structuring powers of language surely ought not to keep language development, throughout the elementary school, in a one-to-one relationship with direct experience. Expecially do we need to be sensitive to the growing linguistic power of children and its changing character as we contemplate the lengthening elementary school program; we do have increasingly more "pre-school" activities. I include them under the rubric of the "lengthening elementary school program" here. Whether you wish to consider them part of elementary education or not is for you to decide; for me, these years are a part of elementary school. As we look at Mr. Britton's picture of the handling of the mother tongue in the classroom, we need to consider the fact that we do have a longer span in which to "develop the child's language." I don't think that it will ever shorten. It will get longer and longer. How, then, does the proportion of direction experience change over the years and dictated by what criteria? Further, what would linguists, psycholinguists, sociolinguists, and psychologists have to say about the relationship between the direct experience and language at the differing levels of development among children?

As I consider the use of talk about direct experience to develop a child's language, I need to know where the talk, and so the developing language, is going--how it will be employed. Two necessities, in Mr. Britton's view, need to be observed if we are to do right by the mother tongue in our schools. One necessity is defined in the United Kingdom's Newsome report; I quote: "The over-riding aim of English teaching must be the personal and social competence of the pupil"; the other necessity derives from the postulate that personal uses of language--expressive uses, to use Sapir's term--must precede literary, poetic, or presentational uses and also discursive, referential, or informational uses. Let me take these necessities one at a time.

The first necessity--that language training be directed to the personal and social development of children--brings us back to the problem of "knowledge peddling"; no one is going to oppose the aim of enhancing the personal and social development of children under the auspices of education and its institutions. In America, our problem has always been--or so it seems to me--our problem has always been to find the best avenues for doing the enhancing; our problem has been "Who does what?" Which kinds of enhancing belong to the school, which to the family, which to other agencies? And when we have tried to foster a development of the child in the schools through ways which are outside of, or only tenuously related to, the traditional avenues furnished by the disciplines, we have always had, I think, difficulty in maintaining a sense of direction. Can we agree on "where we are tending," when we set personal, social development as a goal? Can we establish criteria to help us know when we are on course, when we have strayed? In the past, at least, we have had difficulty with these problems among many of our professional brethren. Concomitantly, in the past, a not inconsiderable proportion of the lay-patrons of the schools have not seemed very confident about the wisdom of our aims and the security of our sense of direction when we talked about personal, social development.

My consideration of the second necessity which Mr. Britton sets forth has to do with the priorities and sequence which this necessity seems to imply. Mr. Britton says, and I quote: "Most of the work throughout the elementary school will be neither objective, referential statement nor 'literature.' It will be transitional, between the expressive and those two poles. Teachers who are impatient on this account, may cut away the essential foundations for later linguistic development." To be fair, please do note the "may." Indeed, in another paper, Mr. Britton has acknowledged that, "there is need for research to see if any evidence can be found to support our belief that when we try to teach too early the language of impersonal affairs, we are not really taking a valuable shortcut, but we are short-circuiting." Would we not have to say that the evidence on this point would surely have to be quite persuasive? For, unless I misunderstand Professor Britton, he is suggesting deferring work aimed directly at the development of the child's capacity to manage language within such disciplines as literature, mathemetics, science, and social studies. Perhaps, to be more accurate, he may not be preposing deferring the work so much as treating it as transitional. Now, "treating work as transitional" would, of course, need to be defined. What would be the quality of this transitional work which would move the child and his language toward the separate disciplines? As I say, I do think the research would have to be quite persuasive on this point. When Mr. Britton discusses "interest," he seems to be saying that only in the more favorable cases, "where [the child's] fear of failure or antipathy is [not] acute can [the presentation of a] body-of-knowledge work to generate interest, and then it appears to be just a priming of a pump." Would we not again have to have much more evidence on this point? Can interest be developed among children, in and through bodies of knowledge, even in the most unfavorable cases?

Or is this quite impossible?

Finally, I come to Professor Britton's specific suggestions for teacher education. I have no serious objection to what he proposes. I thought his proposals admirably stated--that teacher education be substantive; that school experience begin at the moment that educational theory is approached, and continue until the teacher in preparation is ready to go into the schools (that is to say, there should be no unleashing of theory upon the innocent young unless they have some counteracting confrontation, as he called it, in the classroom); that a close relationship be established between the professional and the novice; that a close relationship be created between the professional in the preparing institutions and the professional on the job; that sufficient classroom confrontation be required of the professional in the preparing institutions to allow him to know the responsibilities and the opportunities which exist in the schools.

Mr. Britton concluded his paper with admirable modesty. He assured us that his theories are only partial explanations. Partial they may be. They are illuminating, indeed.

Discussion

A. William Ward, Northwest Regional Educational Laboratory, Group 10:

Two questions keep occurring to me as I consider the speeches of both of the speakers which I have heard today, that is Eleanor Duckworth and Jimmy Britton. I wish to address the questions to Jimmy Britton: One, given the present movement in the United States toward identifying or trying to identify terminal performance behaviors for schooling which are somehow related to the kinds of things that people are expected to do once they get out of school, given the effort to relate the experiences provided for youngsters to the eliciting of "terminal performance behaviors," how can you suggest such a free form of program? That is, will such a program as you suggest elicit the behavior in which we are interested?

Number two: what evidence do we have that teachers learn, from having a kid's "learning experience," how to teach kids?

Jimmy Britton: "Terminal performance": I think those were the words you used. I don't want to sound smug about "terminal performance" because I don't know a completely satisfactory answer to your question. But I do see the question of "terminal performance" as a question asked by people who view education in one way; the same question is, for people who view education in another way, a very difficult one. As I am one of those people who deal with education in "the other" way, your question is difficult for me. I don't think this means we ought not to try to resolve it, but I just think it does leave us the right to say, "Well, that isn't quite the way we frame the question." In other words, I think that it is relevant to say that if you adopt the idea that you can determine what children should know and be able to do when they reach the school-leaving age, you run into the problem which you describe; but it may well be--and there is evidence to suggest--that if you had not thought of the question in that way, you would have had surprising results with individual children who would have achieved great ability in directions that you hadn't laid down in your description of "minimum, essential, requirements." I'm happy with saying, "If you limit education to matters of 'What should children know at a certain stage?', I feel fairly strongly that you have not set educational objectives in a very helpful way.

I don't know whether the episode which I am about to elicit comes from the past records of this Tri-University Project or not (I've been reading them recently). In any case, I read recently somewhere that it is suggested in France that every child in France should know the life story of Jeanne d'Arc. And every child is, therefore, taught the life story of Jeanne d'Arc; every adult, therefore, knows the life story of Jeanne d'Arc. Therefore, everyone in France knows the life story of Jeanne d'Arc, and no one in school is taught the life story of Jeanne d'Arc. I am giving an exaggerated picture of the kind of circularity to which any statements about "What every child should know" are likely to lead. If you begin, as I've begun, with studying the potential of language as a means of learning which can carry the child in the directions in which his interests takes him, then you see the tremendously high potential of what his interests may achieve in those directions. You still leave yourself with the problem of selecting the kinds of activities, and the kinds of environmental effects that you're going to provide for in school, but you also aim to open the school situation so that a great deal more than you ever planned for, is, in fact, part of what the child has contact with. And, therefore, an unforeseen development of interests and an unforeseen pursuit of knowledge is possible. I'm not against knowledge. This is the thing that's so difficult to say.

It is simply that knowledge is of value as you use it, and although you can make a beautifully tidy program of what a child "should know", you cannot make so beautifully tidy a program of how he should use it. And no program which you make can insure that he will use what he knows in this way, or that way, or the other way. Well, that seems to me to be not an answer, but my way of dealing with the question.

/_Mr. Ward reframed the second question._/

Britton: I don't believe that teachers do learn from having the same experiences as those we provide to allow children to learn so I don't know what it was that I said that has raised this question. I don't believe that adults do learn in the same way as children; there is a continuity between an adult's and a child's learning, and as Eleanor Duckworth showed us this morning, some of the materials which will stimulate activity on the part of elementary school children can, in fact, also engage the attention of adults. There is this overlap; but, in general, Piaget surely does show that you have to go through a good many earlier stages before you arrive at the kind of response to experience that you're capable of as an adult. You may be referring to my point about teaching students who hope to teach in the way we hope that they'll teach children. But my point was a more restricted one than the one you're imputing to me; it has to do with way of teaching and attitudes, not with problems, materials or ways of thinking.

B. Nancy Modiano, New York University, Group 6:

I'm going to editorialize more this time; one of the questions to which we addressed ourselves was, "Is there an English curriculum? Should there be one?" Should English be taught as a subject or not? We spent much of the time talking about language and thought, and I hope members of Group Six who disagree with what Mr. Britton said or what I say will put into writing for the records of the conference, what they would like to say concerning our discussions of this morning.

I would like, at this time, to make a point concerning our discussions of this morning, and that is this: that many educators make the very serious error of confusing the Whorfian thesis, as it has been spelled out by Whorf and Sapir and many others, with Bernsteins' distortion of it. If the use of certain dialects and cognitive styles tends to be correlated with poor academic achievement, that does not mean that there is a causal relationship between the dialect or cognitive style and the achievement. Human language is very flexible. If an idea or a construct exists, any dialect can be shaped to express it. And the dialect we speak need not restrict us from such constructs.

C. Miriam Wilt, Temple University, Group 1:

I would like to describe three positions taken by people in our group:

The first one may be framed in a set of rhetorical questions, "What is a teacher to do who is presented with a page by page English course of study that is to be followed day by day?" "Is this a way to teach English?" "Why does this threat to our elementary school English program exist--the page-for-page curriculum?"

Second, some people said that they do not want to see our elementary schools become therapeutic centers for the preservation of the child's mental health. The English program should not be seen as a mental health program; but as an effort to understand past cultures and to understand the cultural patterns of the students and the language which they bring with them to the school. (I would like to say, here that, while we are looking for the first-hand experience, I think I'd like to put a plug in for Sybil Marshall's two books: the first one, An Experiment in Education, many of you may know; the second, concerning an experiment in teacher education, is called An Experiment in Creative Education. It describes how one does the very thing that many of you at the conference are concerned about doing; it describes how a person takes a group of adults and starts off their "learning" in the

English area. Miss Marshall started with poetry, as a matter of fact, and tried to go through the steps so that their students would understand how they learned, how they learned poetry and the arts generally and all the rest.)

Finally, let me say one thing related to Mr. Britton's report on English lower schools, and that is this: that with or without the day by day curriculum in English as presented in a textbook, the children in England write very, very well. They write because they have had many opportunities to talk, and the talk is tucked all around the things that they're doing. I have seen just as good writing in the United States; but I will say this, I haven't seen as much of it. English children are facile; they are easy with their speech; they are easy with their writing. There is much to be learned from a curriculum that does not follow the day to day book kind of English curriculum.

D. William Work, Speech Assocation, Group 5:

We had some difficulties in bridging the gap between our theoretical and our practical concerns; for example, what are the criteria which one ought to use in determining how far one goes in applying the principles of "self-discovery" and/or "discovery by the self"? How does one carry out his innovative impulses in the face of massive budget cutbacks? To what degree can one take a theory which emerges from one context, say England or the psychological laboratory, and try to apply it in another context? To what extent are Miss Duckworth's ideas applicable in the skills areas of the curriculum? To what degree are the implications of Mr. Britton's thinking peculiarly applicable in the British schools? We just don't know the answers to those kinds of questions. The fact that we, here, at this conference are, ourselves, in a learning situation and in a language-mediated situation, seems to have caused us to experience some difficulty distancing ourselves sufficiently for objective deliberation. In a sense, because we are doing what we are talking about, we have rendered ourselves self-conscious. Perhaps we are hung-up in our meta-learning. We are having difficulty in watching ourselves learn.

E. Robert Davis, Syracuse University, Group 7:

I'm asking you again to allow me to speak as a mathematician. I realize that it would be reasonable to imagine that the majority of the people here are interested in some aspect of English--reading, language, or whatever. I think that I can appropriately assume, then, that you know Herbert Kohl's book, Teaching the Unteachable.

I have three quick remarks.

First, when I first got into the "new math" business, one of the most exciting books I found was Mearns' Creative Power; it's actually about the teaching of poetry. Recently I found Herbert Kohl's book, again about the teaching of poetry; in both cases I was convinced that these books were also among the best statements I've seen about what one is trying to do with the new mathematics. There's something in the paradox of the usefulness of these books to a mathematician that needs to be understood; I don't fully understand it, but I'll offer this interpretation. It seems to me that in the cases of both books, the author is saying, "Children can write real poetry," and "they can understand real poetry, but they do not respond well to fake poetry." And what I wanted to say, in my work in mathematics, is that children can do real mathematics; they cannot do fake mathematics. That is, incidentally, one of the points made in Bruner's Process of Education.

Now if you will look at something like ninth grade algebra, as it has been traditionally taught, it is not real mathematics. It is about removing parentheses, and changing signs, and all sorts of things which are not mathematics. But the genuine actually works better than the fake.

My second remark follows closely. "Why have you got the fake, anyway?" And I think I won't try to answer that. We can think about that.

The third comment has to do with trends in curriculum reform: reform in English appears to me to be paralleling reform in math. The first wave of new mathematics appears to have been essentially "knowledge peddling"; various of us were against such "knowledge peddling" from the beginning, but our concerns were not heeded. And we seem now to be in the process of mounting a second "wave" of new mathematics. This second wave, intriguingly enough, draws its inspiration from advances that have been made in mathematics in England and represents a rejection of knowledge peddling and an emphasis on experience.

I'd like to try to give you a fairly clear picture of what English math is like: I visited classes in England--some of them have been recorded on films--looking at how language enters into the English math programs. A class of about thirty-nine children will typically be broken up into about thirteen groups of three each. The language used is language used among three children. If you come into a room, you would see essentially thirteen kids talking at any given time--one child in each of the groups. Each of the groups has a group task. The children are talking all day long and not just in the cracks in the curriculum (or whatever the phrase is). After they've carried out whatever it is they are doing, they write up a little written report on what they have done. The use of language is intimately wedded to talk and reporting. In the United States I've often heard principals say, "I'm sorry that it is so noisy, it must be the day before Christmas, or something." Twice in England when I visited schools, the principal apologized to me and said, "I don't know what's wrong, it isn't usually this quiet."

F. Wes Sowards, Stanford University, Group 8:

Let me comment very briefly, so that you will know how one other sub-group reacted to Mr. Britton's comments. There's a commonality among the reactions that is beginning to develop that is very interesting; our group, I would say, enjoyed Mr. Britton's comments very much. They found the idea of freeing children through language intriguing, attractive, easy to embrace. But the direction in which our discussion moved rather quickly was the direction of trying to consider what is a reasonable, necessary, efficient, useful balance between forces which produce constraint and forces which allow for variety in elementary education and yet allow one to get the job done.

Our group went back again to look from the perspective of history at the problem of understanding what decisions is it legitimate and necessary that teachers make, what decisions is it legitimate and necessary that pupils make, and what decisions is it legitimate and necessary that school systems make, responding to the community that supports the school, and so on. We had two or three people in our group that had had rather extended experiences in England; they gave very positive testimony of the kind that Bob Davis just gave about what is being accomplished in England. I think in all fairness, or to complete the record, I should say that on the way down, in the elevator, I discovered what I'll call sort of a silent center in our group, a group that seemed through its silence to say, "It just can't be all that good in England; those guys saw the good schools, there just have to be some reading problems in England." There was one person in our group that suggested that there just didn't seem to be any reading problems in England; there seems to be no need for remedial reading teachers there. Where the truth lies, I am not sure.

G. Dorothy Seaburg, Northern Illinois University, Group 3:

Perhaps Mr. Britton would like to comment to some of these questions and perhaps not:

Question 1. Is there some differentiation that should be made in the language training of teachers at various grade levels?

Question 2. Should grade levels be abolished?

Question 3. Should we be aiming at specialization in preparation of teachers?

Question 4. What is the role of language in the life of the child at different stages of his development?

Britton: First, as to language training, let me begin with language and linguistics: I would think that training in this area would be more important for teachers of some subjects than for teachers of other subjects. We feel, at the moment, that if we can get a school to have a staff meeting dedicated to providing a language policy for the school, so that things like the role of discussion, the role of talk, the way in which notes are made, in science lessons and in history lessons, and so on can be discussed, we are lucky. If there can be some common exchange of ideas and a common policy agreed upon in a school--even if it isn't the best policy--things will become better. The policy will be more consistent, and by being more consistent, it will be better than what is.

Second, levels and tracks: I can't differentiate the kind of knowledge about language that teachers ought to have by looking at the levels or tracks or grades which they teach. Teachers at all levels ought to know something about the language.

If by "the levels," you mean streams or tracks, I would take refuge under your question about tracking. I think that the best work in English schools is going on where we have mixed ability groupings and not streams or tracks. I feel very strongly about this. I know that mixing abilities increased the teacher's difficulties initially, but it does lead to better progress in the end--soon enough for the objections to it to be quietened quite quickly. I know a large number of schools where teachers have managed to get unstreaming, or untracking, you would call it, put into practice; and in the course of the first year of doing so, I'm sure they haven't solved the problems, but they've gone sufficiently far to feel confident that it was a right task to set themselves.

Third, specialization: can I take up a point that Professor Iverson made here? Simply, a matter of clarification. Yes, of course, I believe in having teachers who are qualified in a particular direction teach children in that specialist area. And I think that if your elementary education goes up to thirteen, that thirteen isn't, obviously, too early for specialization in a particular direction to be beginning to operate. Children of thirteen need more help if they are actively engaged in something that concerns them than can be given on all subjects by any teacher. I think that I have been guilty of giving a wrong impression this morning because of the pendulum's swing toward emphasis upon the academic. I've taken too much for granted. Let me try to formulate my position with respect to specialization.

The idea that the kind of writing wanted in a history account is different from the writing wanted in writing which comes out of a science experiment or from that wanted in the writing of a story--this idea is terribly important to me. The forms of language required are so specifically different that I take it for granted that it is part of the science teacher's job to see that the kind of writing wanted in science--this handling of language--is learned in science lessons; the kind of language needed for history, learned in history lessons, etc. But the pendulum swing is such that I did not mention my interest in the language used in specialized areas. What I wanted to stress was, that if you want children to reach the linguistic abilities necessary to the "areas," you ought to respect what is likely to be the best route.

I agree entirely with Professor Iverson that more research is wanted before we know any route to be the best. Let me say that in three year's time I hope we shall have some evidence--this is one of the central problems that my own research is concerned with. What I gave you was a hypothesis based upon experience, but a good deal of experience and the experience of a good many people; let me give the example of a piece of writing I met with this summer at a conference in West Riding: a child had written, I think it was a ten year old boy, about how he filtered the specimens of water he found when he went on an expedition. School people had taken him to visit a farm a series of times for all sorts of reasons and all sorts of things had come up from the visits. One of the things that had come up for him in the third visit was some work with water. The boy collected some specimens of water from a stream at different points in the stream, took them home, and filtered them, and found there were differences in the degree of suspension in the fast running water, and the deep, slow running water; this was obviously a piece of simple, scientific investigation. In writing these observations or experiences up, the boy said, "When we went to Mr. So-and-So's farm last Wednesday, I collected specimens of water. Under the elm tree where the stream was deep, I collected one specimen; under the walnut tree where it was running shallow, I collected another." And then he went on and told what he did and how in the end he filtered the specimens and found his conclusions. Well, now, this kind of writing is what I mean by transitional writing. The fact that it was Mr. Jones' farm, the fact that it was a walnut tree and an oak tree, had nothing to do with the scientific work which he was actually doing. But if the science teacher decided that this was not a scientific way to write, he would be ignoring the fact that, as far as Johnny was concerned, the elm tree was an elm tree; he was there; he saw it as an elm tree; it was Mr. Jones' farm; this is me, Johnny, in that position, writing about what happened. Now that's simply what I mean by the transitional.

If you try to exclude the transitional too early, then you are not going to get the kind of writing you want. The self has got to be there, to be excluded from the purely referential writing; if you get the referential writing where there has never been self, then it's not going to be very good writing.

May I just say one point to Nancy Modiano you mentioned Professor Bernstein, you mentioned Whorf. I think even Whorf said that it was the infant mind that's poured into the mould of language. He said something like this: "Language is not so much a cloak following the contours of our thought, as it is a mould." He didn't say that our minds are poured, he said that the infant mind is poured. The Whorfian hypothesis even in its severest form, a form which nobody now accepts, said only that language provides the mode of analyzing experience and can only be constricting to the infant. Beyond that stage, if a language isn't structuring experience as you want it to do, then you modify it, you invent new terms, in order that your language shall keep pace with the new distinctions you wish to make. This notion does seem to me to underlie a good deal of what I said. If you admit the notion that the process of structuring experience is one which takes place through the medium of language, you have to take into account that children with different language backgrounds will be structuring experience differently, sometimes in quite fundamentally different ways. And I think Basil Bernstein, at his most lucid, recognizes this.

H. Eleanor McMahon, Rhode Island College, Group 11:

I think that Professor Britton won his campaign with our group; there certainly was a consensus that teachers--undergraduates in teacher education programs--need to know more about the structure of language, the role of language, and the way language develops in children. Professor Britton's insistence that talk should go on, that listening to children discuss what they are doing, their interaction with objects, helps one to find out something about their thought processes suggested to me a recent tongue-in-cheek book about plans and the structure of behavior. It says that, though introspection, as a means of discovering anything about learning, had been thrown out by the SR people, the computer people had brought it back, finding it particularly useful in attempting to program computers to solve problems. By having individuals discuss the method of solving problems which they used, they could, in turn, translate this into a computer program for solving problems.

One last comment: I found Professor Davis' description of the schools in England particularly interesting in the light of Piaget's comment to the effect that some person from Geneva had suggested to him that the best form for the elementary school would be to have two classrooms, to put the children in one and the teacher in the other.

I. Judy Craighead, New Orleans, Group 9:

Several random ideas concerning Jimmy Britton's "homespun" theory of learning and teacher training were offered by the participants, none being too pertinent. Before anyone could contribute anything especially germane, we made a discovery. There was in our group a member of the Illinois team who had recently visited "model" schools in England; consequently, her observations and experiences there became the topic of conversation during the greater part of our group (?) session. Although this participant's comments were worthy of being expressed and listened to, I do feel that things strayed pretty far afield when we were presented with a glowing review of an "almost documentary film of actual English schools" (To Sir With Love), and with an equally complimentary appraisal of the "typical school teacher in England" as portrayed by Mr. Sidney Poitier. At this point, a feeling of cultural deprivation was experienced by those of us who had never visited England or seen the movie. At the end of the period when there were only a few minutes remaining, we somehow found our way back to the subject of teacher training in the United States. It was suggested that we dispense with trying to set forth what "an ideal teacher" should be and do. Indeed, we might, instead, encourage teachers to stray a bit from the myth-like "ideal"--encourage them to learn to improvise. Practice before theory seems to be needed; when a child is being taught, the concrete or practical situation must be presented before one can transfer learning to the abstract or theoretical. So with teaching.

J. Dorothy Haupt, The Merrill-Palmer Institute, Group 9:

What seemed to be missing from our discussion of J. Britton, what was not expressed at least, was the acknowledgement that a child's willingness and ability to talk in a classroom, for example, depends not only upon the opportunity to talk and having others to listen, but upon his earlier stimulation by adults. As in the case of Miss Duckworth's presentation, little or no mention was made of the period of infancy. To me, more attention must be given to this period in all teacher education programs. Mr. Britton's emphasis on the acceptance of verbalization as evidence of children's thinking is troublesome. With preschool children, what a child says may or may not indicate his question, the point of his information, or his understanding or comprehension. While I fully support Mr. Britton's motto, "Listen-Listen-Listen," I should also like to give teachers another slogan of Stop (talking), Listen, and Look (for non-verbal communication). For example, the present emphasis on the speech and language development for culturally disadvantaged children poses a multitude of problems, not the least of which is the parent's reaction to the child's increased talking and questioning. The vivid quality of their expressive language all too frequently provokes corrections of their usage or their conventional form of address. Again, Millie Almy's questions about the "verbal facade" of many middle-class children should serve as a warning against assuming that fluency is necessarily related to knowledge or understanding; one of the problems which we face with children who have been highly rewarded by their parents whose fluency may reflect only family style, interest, and values, is to find ways of probing for their real understandings. The group faced the problem of providing options for children. It was aware that the culturally disadvantaged child has few options: he has little time to listen; time in which his expression is encouraged; his teacher has little time to give him other options.

K. John Flavell:

I had the feeling this morning after hearing the two talks, that interesting as I found Miss Duckworth's talk, I really wish I'd been chosen to comment on Jimmy Britton's talk because it came a lot closer to things I'm supposed to know something about. And I guess the sum and substance of my reaction to his talk is that I agreed completely with everything he said. I felt it was an excellent talk except that I think that everything he said, is, as it were, more true of thinking than of language, or it might be better to say that it is as true of thinking as it is of language. I have the feeling that all of the matters he described are always true of thinking and that thinking may or may not engage the linguistic process. It may engage other kinds of representational systems. And I think that we stand in some danger, perhaps this is the wrong place to say this, we stand in some danger of overestimating the role of language and of the verbal processes in human cognitive development. There is some recent evidence, for example, that Luria's experimental work on the directive function of speech just "ain't true" for certain kinds of experiments.

We've done some of this work in our own laboratories; I think that Furth's work with deaf children who think remarkably well, despite their deafness (I'm talking about deaf children who have not yet picked up a well codified sign language, or equivalent), may be suggestive as to the extent to which Mr. Britton's comments apply to thought as opposed to language.[1] And I think that these and other scatterings of evidence suggest that the pendulum, at least in developmental psychology, is changing, somewhat. I do not mean to undervalue language; nobody in his right mind would do that. I do mean to suggest that it's not everything to suggest that the Whorfian position, or any variation on it, is surely too extreme and to suggest, finally, that we look for other kinds of, as it were, intelligent things that children do, in schools or elsewhere, which are either not purely linguistic or not intrinsically and essentially linguistic.

L. Nancy Modiano:

You know, I think maybe one of our problems in this area is the confusion we sometimes make between the word "language" and the word "symbolization." Consider the work with deaf children which Mr. Flavell just mentioned: deaf children are able to symbolize. Furth's work shows very dramatically that deaf children develop the same structures of intelligence that hearing children who know words develop. If we were more careful in our own thinking and expression to delineate when we mean "words," and when we mean "symbolization," we would be better off.

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[1] Hans Furth, Thinking Without Language, Free Press, 1966.

The Rhetoric and Reality of Educational Change

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I want to talk to you briefly and simply, if I may, about the rhetoric and reality of educational change. Let me indicate my biases in this matter before I begin my formal argument. It seems to me that schools in the last one hundred years have become large scale bureaucratic institutions. They have followed almost classic lines of bureaucratic development. In this development, they have developed a system of roles, graded by authority, and fixed jurisdictional areas, regulated by institutional rules, and/or state and local laws. The individual personalities of teachers, administrators, and of other personnel in the schools and colleges, including the personalities of professors and deans at the university level, are formed by the institutional bureaucracy of which school personnel are a part; certain personality types predominate in the staffing of bureaucracies. The people in this room, I would suggest, are almost penultimate members of the educational establishment and of the large public establishment in the United States, the establishment of upwardly mobile individuals. Such individuals have certain kinds of personality types that have specific kinds of effects on the bureaucracy in which they work. Such individuals also have specific kinds of capacities for being affected by a bureaucracy. The kinds of personality characteristics and traits which have been important to the development of the successful people in this room and for teacher development generally are the characteristics of loyalty, seniority, conviviality, and, especially, dependency. I should like to suggest that the characteristics of bureaucracies, in both industry and the educational establishment (size, specialization of function, hierarchical ordering, a system of status based on seniority and administration rather than skill, control of the system by a few, and finally, impersonality in the organizational thrust) are characteristics which determine, in the main, how schools and school systems, teachers and administrators, professors and deans behave.

I came to my position intuitively at first. Let me give that story. In the summer of 1966, eighteen school superintendents asked Martin Deutsch and Tom Hall and me, in conjunction with other personnel, Eddie Ponder being one, to come up and talk about the possibility of using some Title I funds for the retraining of teachers. We talked at first to eighteen school superintendents to find out what their problems were with respect to disadvantaged youth. And trying to talk to eighteen school superintendents in the same room is trying to get hold of the wiggling in a bucket of fish. I can only imagine eighteen deans as being worse. After a day and a half of talk with the superintendents as to how they might pool their money, and what they might do with their teachers, we came to a really interesting point, one given focus by one of the superintendents of the upper Westchester area with which we were dealing: "Listen," he said, "I've been around here for twenty years. Twenty years ago we had kids in the classroom and they couldn't read, and they were upstarts, and they got in the way, and the teachers were angry, and so we got sold on the guidance movement. So we put in guidance personnel. We had enough money for that. And about three years later we found that we had upstarts, kids who weren't learning and who weren't reading. Then we got sold on the reading specialist. So we put in reading specialists in the schools, or we had reading specialists who traveled to the schools and helped the teachers. About three or four years later I looked around; again, there were upstarts, the kids weren't reading, and the teachers were angry. Then came along some people from NYU and Columbia, they sold me on a psychiatric, psychological orientation. What the kids needed was somebody really to talk to. So we put in consulting psychologists; we even put in consulting psychiatrists. And now we've come to the day when the kids can't read, they're upstarts, and the teachers are still angry. What I want to know is, what are you going to do about that? All I've done is hire people; the kids still aren't learning." Out of this representation of the problem, an interesting project developed, one that I consider the high point of my career with respect to design. We designed a beautiful, really a beautiful project, in it the whole business of a teacher's sending a kid down to an office, talking first to a reading person, then to a psychologist, or a guidance person, or whatever, and then coming back to the classroom eventually, and then being sent down again was abolished. We designed something related to the education of teachers in which the specialist was going to be brought to the classroom. In other words, in our project the whole medical model, the whole business of sending people away to a specialist, was out; we were going to bring the specialist into the classroom to help the teachers, because we said, "Either the kid makes it in the classsroom, or he doesn't make it at all."

The second thing which we did was this: I had had a research seminary running at Teacher's College during that previous year. In this seminar, we were looking at questions having to do with disadvantaged youth and projects that made a difference--or at least seemed to as far as the evidence was concerned. Through case after case, after case, the model that came through hard was the Moshe Smilansky paradigm -what Sara had done in Jerusalem at the Henrietta Szold Institute; what he had said, if you please, was "If you want to help the kid, help the parent. You have got to link up there. If you don't link up with the parent, the game's going to be over in eight or nine cases out of ten." So the second thrust of our effort, a thrust which went with our effort to bring the specialist to the classroom, was an effort to have the teacher involved with the parents. We wanted to have the teachers understand the parent's life-style, the problems that they have, so that parents and teachers could link up in support for the kids in school. Really, two major purposes were all.

We constructed a program for the summer that was terrific--three hundred teachers, three schools, kids that were not learning; everybody was working in the classroom, there was a revision of curriculum; there was clear change for the better. It was really perfect. The practice of referring the kids was ended. The specialists had to work in the classroom. We had meetings with the parents after school (we were paying the teachers an extra stipend for that) and we brought the parents to the school. And, in the whole range of activity, we felt a real, a genuine, sense of accomplishment. We thought, "Well, we've got it, you know, this is great." And then the National Institute for Advanced Study in Teaching Disadvantaged Youth, in one of its deliberations, one of its wiser moments, said, "If this project is so great, let us follow it up and see what happened to those three hundred teachers, in those eighteen schools." So Philip Friedman from Hunter College and I devised a Focused Interview Schedule. We interviewed all of the teachers that were in the project and all of the principals that participated. And we focused on the two major objectives that we had in mind: bringing the specialist to the classroom and having the teacher understand the life of the parent. In all three hundred cases, in two sets of interviews, the question of parent involvement was not mentioned once. In addition to that, as soon as the school year began, the game was a different one. The office called the Guidance Office was there--so the guidance person went to it. The office with the name Reading Office on it was there--so the reading person went to it. And the Office with the name School Psychologist on it had its sign freshly painted, and the school psychologist went to it. And the notion that the teacher in the classroom could do something different with his help, or that he could understand parents differently, was forgotten, because the name of the game in the school year was not the name of the game in the summer. And I really could have cried in my beer that day, when I realized that about $150,000 was down the drain. But then I understood a couple of things--first of all, that in American schools, $150,000 goes down the drain very often. And I began to look into the question of "How come?" Why was it that this system we call education, that is manned by this establishment sitting in front of me, is so incredibly rigid, so unbelievably unamenable to change, so really fantastically committed to the bureaucracy which they have formed. And so that took me to the position which I'm going to set forth.

In examining the question of educational change, one is led through pathways which require that one consider the nature of institutional bureaucracies, change and change-agents, the effect of personality and belief upon change, and of course, the history of it all. Before I launch into a discussion of the system of education which has evolved in America, I wish to set forth some basic considerations and assumptions to set the pattern of the discussion and its boundaries.

First, the schools have become bureaucratic; the scale of their bureaucratic sector has steadily enlarged over the past thirty or forty years. In this development almost classic lines of bureaucratic development have taken place: a system of roles graded by authority with fixed jurisdictional areas regulated by rules and/or laws has been elaborated.

Second, in complex role systems, the individual personality is formed by institutional bureaucracies, and certain personality types tend to predominate in their staffing.[1] The personality characteristics which are important to individual success in a bureaucracy are loyalty, conviviality and dependency. The seniority factor is crucial to bureaucratic success, but the more senior the bureaucrat, the more he will exhibit those personality characteristics which cause him to be accepted in the structure.

Third, the characteristics of bureaucracies--a massiveness of organization; a specialization of functions within the organization; a hierarchical ordering of roles, tasks, and rewards; a system of status which is based on seniority and administrative ability rather than on specialized skills; a system of control locating power in the few; a system providing for impersonality in the thrust of the organization; and, finally, a logic of rewards providing for deference to authority--are all apt to be characteristics of large systems for offering schooling of which teachers and administrators, professors and deans are a part.

The gathering together of a group of people at an educator's convention--a convention of controlling figures in curriculum, administration, writing, teaching, and supervision--represents a gathering of the penultimate of the upwardly mobile members of the educational bureaucracy. To bring such a group to reflect on their own behavior--the manner in which they make decisions, the goals they have for children and youth, for prospective and experienced and inexperienced teachers--would be an achievement. Most of their training in the educational bureaucracy has taught them not to reflect at all.

The System of Education

Much of the mythology surrounding teaching, schooling, and the educative process comes about because the practitioners in the field, teachers, and administrators, need protection from the incursions of researchers and others who would look at the system and its results in a more or less objective fashion.[2] Consequently we are constantly faced with propositions to which the practitioners and the general public pay homage. Among these propositions, the following are especially prominent: the system of education is local in nature--its controls lie at the local community level; class size is critical to the learning process; teachers are independent professionals providing a professional service in the classroom; teaching can never be measured because we can never agree on basic terms. These and other mythologies cause immense difficulties when one attempts to look at the manner in which professionals can be prepared or when one endeavors to examine the critical entry points in the system.

In considering the nature of the educational system, some writers[3] have concluded that we have, de facto, a national system of education. The evidence which one can muster for this conclusion centers on four basic, though indirect, indices for a national system. These are:

1) There exists a national recruitment of teachers;

2) Students move from school system to school system with little difficulty;

3) Instructional materials enjoy a national market; and

4) There is, in effect, a national examination system.[4]

What we are faced with at the start of our analysis is a loose confederation of 37,025 school districts, displaying little difference among themselves in organization, teaching, curriculum or means of separation and promotion. The existence of a large scale organization, serviced by supporting and ancillary systems,[5] indicates that the prospect of local attempts at innovation and change will suffer at the hands of a superbly functioning interlocking series of schools, the top of which is the graduate department of the modern university.

This last point is critical, for it comes out of an examination of the school system as a basically hierarchical structure; great power, influence, and capacity for significant decision-making are located at the top. The selectivity, system of recruitment and efficiency which are built into any bureaucratic structure are also part of the system of education, and in it, likewise, the interests of the higher group of educators are serviced by those immediately below. Educators in public schools have had training in the colleges--often in the graduate department of a university. The interpenetration of staff and functions among the levels of the hierarchy and, especially, the control over entrance to the graduate departments of a university possessed by the graduate school creates a self-contained and self-perpetuating system centering in it. The system is supported by a series of ancillary structures and relates to the testing regularity, the time regularity, and the curriculum regularity in the system as a whole.

This brief analysis gives a view of the school system as a bureaucracy in exactly the sense in which that word was defined by Max Weber in 1922. A specialization of function, limited definition of roles, and an interdependence of various sub-structures characterizes the system of schooling in the United States. One additional factor which causes both a difficulty and a direction should be noted. The enormous turnover of teachers[6] increases the regularity and the rigidity of the curriculum, the administrative procedures and the induction techniques. The stability required by the turnover of teachers--innovation and change require attention, follow through, and a "product champion"[7]--indicates, at least in part, an aim which teacher education might take to itself. Given the tentative nature of commitment on the part of the functionaries at the lower level (e.g. teachers) any developmental procedures should look to the committed professionals in the school system, especially those with supervisory, administrative or regulatory duties.

My point is reinforced by the nature of the reward system in the teaching profession. Generally speaking, the teacher tends to look to the principal and to his immediate supervisors for support, encouragement and reward; much of the evidence which centers on this critical point indicates that the principal of a building is a critical person in setting the "climate" in which teachers function. A climate which is permissive from the top down translates itself into a similar kind of classroom organization. The teacher responds to the kind of organization which the principal sets in operation.

One additional finding regarding the "system" of education: the large city school systems seem to develop a sense of climate which is unique to each city.[8] Boston sets forth, based on a unique history and tradition, one kind of organizational climate while New York entertains another. A recent study of the New York system[9] (and there is substantial evidence to adduce that this evidence is not unique to New York City) indicates the enormous power wielded by the "corps of supervisory employees at the headquarters building." The crucial nature of the power was in the area of budget and curriculum, but included other areas of school operation as well.

Again, my study reinforces the point that school systems tend to generate their own bureaucracy, tend to limit the nature and rate of change within the system, tend to function with their ancillary structures in a national system of education and tend to a uniformity of response so as to protect those within the system from those without.

What we have then in this system of education is:

1) A hierarchical system locating much power above the level of the teacher, but centering it most probably on the middle level functionaries;

2) An interlocking system providing for an interlock between each level of education and placing the graduate school as the capstone of the system;[10]

3) A bureaucratic system in which role definition and specialization of purpose tends to place the teacher in the role of functionary rather than autonomous professional; and

4) A de facto national system which is geared to several functions and which is supported by a formal system as well as complementary and independent ancillary structures related to testing, accreditation and promotion to higher levels.

What emerges from my previous consideration of the system of education in the United States is that teacher education, like the system of public schools, has an enormous capacity to absorb change and not change at all. A review of programs related to the preparation of teachers indicates that the apparent philosophical differences between one program or another are but shadows in the illusory series of debates held at conventions and in classrooms.

The capacity of our system to adopt, modify, accommodate to and make regular hundreds of program changes indicates the enormouse political power which this informal system can exert. It takes virtually anyone into camp and has, as a consequence, more camp followers than troops. The endless arguments of teacher educators as to the reliability of one program as opposed to another has been so much psychological fluff. The major benefit of this type of argument is that, if someone does come along to challenge the issue of what has been going on in the field, the teacher educator who is on his toes can point with some degree of pride to the unique program at Oshkosh which is exactly what the critic wishes to see. When the teacher education program of the nation is everything, it quickly becomes nothing.

The one real difference which historically separated schools of teacher educatio or normal schools from other schools offering undergraduate education related to the view that all of the subject matter in the liberal arts, all of the professional courses, and all of the experiences in practicing teaching should be related to the single function of teacher education. This basic and fundamental difference was quickly emasculated by the desires of professional educationists for a regular place in the college-university structure, by the ambitions of prospective teachers for courses which would lend themselves to an easy convertability in furthering careers other than teaching and finally, by the expansiveness of the Modern University and by the thrift of state legislatures who saw little profit in maintaining separate institutions of undergraduate preparation, all of them seemingly offering the same kinds of subject matter. An analogous kind of development went on in the field of vocational education, but while the context of training and subject matter for the trades and industrial complex was explicitly different from that of the typical undergraduate program, the evolving single purpose Normal Schools could make no such claim. The intellectual claim of the liberal arts in teacher education, viable since the earliest days of the liberal arts, was not and could not be denied.

Consequently, the Modern University with its research orientation and domination by the graduate school found a place for the preparation of teachers, administrators and other related personnel. The Modern University, including as it now does the Schools and Colleges of Education, continues to have the broadest possible conception of its role along with the former Normal Schools turned State Colleges. This expansiveness of effort and interest is both a tribute to those involved in the effort as well as a caution for those who wish to enter the murky waters of teacher education.

A Venture into Organizational Systems

Given the proposition that the educational system is hierarchical in nature with control of the system at the top, and that it corresponds to a highly organized bureaucratic structure, it is important to examine some of the general principles of organizational change that have come about in recent years. An underlying principle characterizing organizational change is that it occurs infrequently. There is no reason at this time to suppose that the educational system is any different or that the relative difficulty of affecting change is any less. However, as some writers have noted,[11] change sometimes does occur within organizational structures and that from these limited number of occurrences some tentative generalization can be made. Some of these generalizations refer to the nature of change vis-á-vis the many participants in the system. Others refer to the changes that can be expected within the administrative structure of the organization.

There are some social psychological principles which seem to operate when organizational change does occur and it might be well for us to spell these out at this time. First, the expectations of individuals within an organizational pattern are absolutely critical to the question of whether change occurs or whether it doesn't. Since unilateral power and the notion of hierarchical ordering underlies the educational systhem, the expectations of the person directly above the teacher are far more important in creating change in the teacher than are those below the teacher, e.g., his students. The same principle would hold as one moved up the organizational ladder in schools, ending in the graduate school.

Second, changes which can be recorded when the individual is out of his own organizational situation (such as summer programs in college classes, Saturday morning programs in extension centers, evening session lectures, etc.) do not have any long-term impact when the individual returns to the organizational setting. Change off the job has far less force than changes which occur in situ.

Third, a unique and peculiar relationship exists between conditions which facilitate change and the personality structure of teachers and/or administrators who are willing to accept the change. This syndrome, which includes personal characteristics on the part of the school functionary, as well as educational programs developed within the school, is critical to the bet one chooses to make with money. You do not improve the quality of educational change nor its rate by going to school personnel or school situations which are most likely to resist educational innovation.

Fourth, the improvement of school functionaries in a vertical pattern of training, which includes school personnel drawn from the lowest echelon, such as teacher aides, to the highest, such as assistant superintendents and superintendents, would prove more feasible vis-á-vis change than grouping individuals by role or function. In a similar situation linkages between college and public school personnel would prove more efficacious than keeping them separate.

Fifth, programs of change involving segments of the educational systems must have continuing feedback to controlling power forces above. Without adequate feedback and evaluation, educational organizations tend to stress cost reduction[12]; consequently, programs involving teachers, administrators, or related educational personnel must set up, in advance, an adequate system of information feedback.

Sixth, the changes contemplated by an educational system or by those outside the system must be capable of institutionalization. Essentially, the idea to be introduced cannot be so different from present practices so as to cause puzzlement or threat to the mind of the practitioners or functionaries. The person who wishes to introduce change in an educational system must first go along with the system to get his idea into practice. That the innovation or the change should become a part of the school system should be the objective of any group wishing to introduce varying procedures into that system.

Seventh, and last, what seems to come through the haze on the issue of an educational and organizational bureaucracy is that if you want the change to grow and become a part of the organization itself, then something more than ideology must come into play--somebody has got to be in charge.

These then are general principles relating to organizational and bureaucratic change; Griffith[13] has, further, written incisively about the nature of administrative change. He lists four principles having to do with conditions which aid change in an educational setting. These are:

1) The major impetus for change in organizations comes from the outside;

2) The degree and duration of the change is directly proportional to the intensity of the stimulus from the supra-system;

3) Change in an organization is more probable if the successor to the administrator is from outside the organization than if he is from inside the organization; and

4) Systems respond to continuously increasing stress, first by a lag in response, then by an over-compensatory response, and finally by catastrophic collapse of the system.

Additionaly, Griffith notes that there are four characteristics of organizations which inhibit educational change. These are:

1) The number of innovations is inversely proportional to the tenure of the chief administrator;

2) The more hierarchical the structure of the organization, the less the possibility of change;

3) When change in an organization does occur, it will tend to occur from the top down, not from the bottom up; and

4) The more functional the dynamic interplay of sub-systems, the less change will occur in an organization.

What seems to come through as one looks at the social-spychological end of the matter in combination with administrative theory as postulated by Griffith is that innovation from the bottom is virtually impossible in an educational system and that the independence of sub-systems within the organization isolates each group from change activity. Clearly, the question that we face in providing for organizational and bureaucratic change is linking the functionaries, providing for communication between those at the top and at the bottom, engaging in programmatic activities which are centered in the situation where the functionaries are at work, and, lastly, selecting school systems and individuals who seem to have a propensity for testing out new ideas. Any consideration of the use of power in teacher education, in the light of what we know of these aspects of bureaucratic and administrative change, must include, at the same time, a reference to higher education, the context in which teacher education finds itself. If one wishes to assess the possibilities and potentialities of funding programs in teacher education, the critical questions will center on the students as potential, the college as unique, and the program as organic to both students and college. Large scale intrusions into training programs cannot be based on a single model of teacher education but must rather turn to the kinds of advantages which colleges in individual contexts seem to offer. An effort to examine how programs which would change systems could be created could profit from the growing body of material which reviews and locates the critical linch pins in the bureaucratic structure of schools and colleges. It is most important to those responsible for the assessment of power in schools and colleges to maintain a tendency to partialize the problems of schools and colleges, for the very size of the educational establishment has provided for those who sit in positions of responsibility a convenient haze and smog with which to confuse, parry and obfuscate responsible criticism of their establishment.

Directions and Priorities

It is possible to review the matter of educational system and its attendant problems, explicate the research on organizational and bureaucratic change, look to some examples of this change within large-scale organizations in the society, and then quit. The task of the "here and now" requires that two questions be reviewed and kept in mind. First, there has to be some attention to the question of the direction of professional training and to its component parts; and second, there must be attention to the issue of priorities in servicing the educational system with a view related to professional development. Let us go to the first question and attempt to look at a series of propositions which are related to the development of the professional teacher and administrator.

The professional in the educational system serves the unique function of spending a working life serving, in a more or less direct

fashion, the welfare of others. This service comes about because the clientele of the professional perceives the service as necessary and essential. Additionally, the professional in the field of education should have one of the specific characteristics of the helping professions which is to engage in a two-way communication with his clientele. In the educational transaction the client (the student) responds not in terms of something that is done to him, but in terms of what the experiences in school mean to him.

The development of the professional teacher or administrator, both of whom are service functionaries to children and youth, begins, ends, and is passed on in the degree to which each feels an assuredness and security about the tasks each is expected to perform.

The question of analyzing the tasks which the professional educator is expected to perform centers on two crucial concerns: first, what the educational enterprise should be about; and, second, the translation of specific knowledge and skills on the part of teachers and administrators so as to cause a school system to operate effectively with the goals of the enterprise in mind. Let us turn to these two elements which would bring us full circle in our analysis.

If schools are meant, using Melvin Tumin's language, for children, for their development, for their growth, and for their pleasure, and if secondly, this same development of children takes place in transactions between the student and the teacher, then it follows that if children fail to develop to their potential, the shortcomings or errors are to be sought in the structure of the school system not in the innards of the children.[14]

If one supplements the above proposition to the extent that a child takes from schooling that which is inherently valuable to him, and if one adds that there is no conceivable justification for a democratic society's preferring the education of some children over others, then it does follow that every child has a full claim on the facilities and rewards of the school.

The direction of professional development of both teachers and administrators could center on the basic proposition of the inherent worth of individual difference--not their denigration or elimination. The flexible use of teacher and administrative time, the full development of individual potential and the classroom setting as diagnostic rather than bureaucratic are but some of the goals which could be pursued by teachers, supervisors, and administrators.

The consequences of such a series of simple propositions related to the educational development of children would mean that the profes-

sionals' knowledge, skill, and attitudes with respect to schooling (learning and teaching) would mean something other than the present bureaucratic stance. In effect, what is being postulated at this point is that the teacher's knowledge and his capacity to use that knowledge in a professional setting is not well served by the present hierarchical structure of the educational system nor the narrow range of subject matter which the teacher studies in that system.

Let me give an example. Teachers who have received the standard undergraduate curriculum (80% Liberal Arts and 20% Professional Education) view their securities, their teaching, and their role in the school system as would a middle-level functionary--they are operating to create skills in children which will enable the child to be successful at the next highest level of specialization; in essence, the teacher's function is that of a gatekeeper.

Reinforcing the teacher's concept of the classroom is the context in which he receives his advanced graduate instruction. In most cases an experienced teacher takes courses at a college or university and these courses are defined by professors, approved by departments, and serve the same kind of gatekeeper function. The courses are organized in a time-honored fashion, which includes lectures, quizzes, and research papers. The teachers and administrators who come to the courses are presented with a view of knowledge which is increasingly specialized and, in many cases, not relevant to the classroom situation at all. Knowledgeable professors and less knowledgeable students come together--one to give, the other to receive. The central assumption is that what the university offers will improve the teacher and his teaching. What is probably the case is that the teachers and administrators have conformed to the higher forms of gatekeeping, while the critical issue of learning and teaching and other related problems rarely comes to the surface.

By setting the education of teachers and administrators in the structure of college and university courses, rather than in the situation where teachers and administrators find their work, we engage in a contradiction of the evidence previously cited. The linkage between the system of public education and the system of higher education is not readily apparent, except on the terms of the latter. In summary, let me suggest that if schools are to be related to the educational development of children and if that same development is to serve other than a gatekeeping and bureaucratic function, then the education of professionals will require a different order and a different conception than we presently find.

Principles Which Could Help

What we have attempted to review in the previous material has been the basic nature of the educational system and its attendant bureaucratic problems; second, the nature of organizational change in both a general and administrative fashion; third, the goals of the system we call education; and fourth, the goals of professional training as related to the goals of the system. What seems manifestly apparent is the clear lack of relevance of professional preparation to many of the pressing problems of schools, classrooms and children. What is clear is the linkage of undergraduate and graduate schooling to the needs of the bureaucracy above, not the schools below.

Consequently, the guidelines which are suggested as a concluding statement to this paper are based upon the previous discussion as well as an interpretation of the research findings in relationship to the broader possibilities of *all* educational personnel training. These suggestions should be regarded as tentative, as subject to review and as the basis for discussion. Among the suggestions which may be adopted, these are probably most critical.

1. Priority should be given to these programs which design a closer meshing of university and school personnel *in situ*. The situational context of professional development should be the context in which professionals work.

    a. there should be a priority for those school districts indicating a willingness to cooperate with college and university staff, and vice-versa,

    b. there should be a continuing feedback arrangement which involves a research component in each program,

    c. in all cases where feasible, a priority should be given to a concept of a field test or practicum as crucial for all professionals in developing programs. Administrators and teachers must have the opportunity to try out and evaluate new ideas and programs,

    d. for a period of 5-10 years programs should emphasize diversity of attack and receptivity to research findings.

2. Emphasis should be placed on the education and re-education of administrators, supervisors and long-term professionals who are in control of school systems; such education and re-education should be developed between the professionals in the field and the professors at the university.

3. Priority should be given to program development which looks to vertical contexts in professional development (e. g. , programs should include school functionaries ranging from teacher-aides on the one hand to school superintendents on the other; from the beginning of professional development in the pre-service arena to the in-service education of teachers and administrators with the cooperation and inclusion of college and university staff as planning, learning and training agents).

4. Priority should be given to a diagnosis of school difficulties, both teaching and administrative, as the beginning point of courses, and field experiences for professional development should be viewed as mandatory.

In conclusion, in the judgment of the writer we are long overdue for a critical re-education of the professional staff of school systems and the total university who must teach them. This paper proposes that the direction in any discussion of programmatic development in professional preparation and training provide school and university personnel with more vision than once they had as well as more insight into the system they control.

The issue which faces the presently assembled establishment is whether or not they perceive the gap which exists between the legitimate demands from areas of the society for redress for educational disenfranchisement and the state of present programs in education, teacher education and schooling. Within this general problem, what is probably critical is the nature of the person who must carry forward the task of restructuring, reorganizing and retraining the members of the teaching profession.

The difficulty of the task is awesome, but the rewards great. For those who wish to undertake such a work, the words of President Kennedy may have some meaning. In speaking of those who must actually do the work and undertake the changes he said,

> The credit belongs to the man who actually is in the arena, whose face is marred by dust and sweat and blood . . . who knows the great enthusiasms, the great devotions; who spends himself in a worthy cause, who at the best knows at the end the triumph of high achievement, and if he fails, at least fails while daring greatly, so that his place shall never be with those timid souls who know neither victory nor defeat.

FOOTNOTES

1. Robert Tresthus, The Organizational Society (Alfred A. Knopf and Random House, Vintage Books), 1962.

2. Matthew Miles, Innovation in Education (New York: Bureau of Publications), chapter 25.

3. Sloan R. Wayland, "Structural Features of American Education as Basic Factors in Innovation," in Miles, Innovation, p. 587-613.

4. Ibid., p. 599-602.

5. Ibid., p. 595-6.

6. No more than 2 of 5 teachers who are prepared to teach are teaching after 5 years.

7. Miles, op. cit., chapter 25.

8. The work of Alan Rosenthal, Rutgers University, is instructive on this point.

9. Marily Gittell, Participants and Participation: A Study of School Policy in New York City (New York: The Center for Urban Education, 1967).

10. Wayland, op. cit., p. 594-5.

11. Griffiths, Daniel E., "Administrative Theory and Change in Organizations," in Miles, Innovation, p. 425-436.

12. Miles, op. cit., chapter 25. See also Mann, Floyd C., "Styling and Creating Change" in Bennis, Beene, Chin, The Planning of Change (Holt, Rinehart and Winston, New York), 1964, p. 612-613.

13. Griffith, op. cit., Miles, Innovation, p. 434.

14. Melvin Tumin, Teaching in America, speech delivered to National Committee for Support of the Public Schools, Fifth Annual Conference, Washington, D. C.

Critique

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I agree with this paper, that is, I agree with its general philosophic position. Mr. Haubrich's ideas are sound, and I could draw dozens of illustrations from our work in the University City schools to support his case. Mr. Haubrich is saying that, if the purpose of the school is to develop children, then every child has a full claim upon the school; if there is worth in individual differences, then the schools must change. Mr. Haubrich does not go into the subject of what the changes in the schools must be.

The forces that inhibit change are obvious. Mr. Haubrich identifies them--the bureaucratic nature of the system, the rapid turnover of teachers, the "power" to resist change imposed by budget limitations, the teacher's own view of his role as implying only the responsibilities which the functionary normally bears. The "school" system, in this country, is definitely not "local." The sub-systems, the interlocking hierarchy with the university graduate school at the top, have provided us with a national pattern of schools, schools that are more like one another than different from each other. Each person in the hierarchy gets his signals from the person directly above him; each serves mainly as a gatekeeper for the next layer; the narrow studies of the teacher in his professional preparation contribute to his resistance to change; his studies are not relevant to the pressing problems of real classrooms. Granted all of these inhibitors, Professor Haubrich still has suggestions on how to effect change. He advises us to provide a program of inservice study at the scene of work rather than at some institution away from school; he would provide inservice linkage systems up and down the ladder from administrator down to teacher-aide, or even on up into the graduate school. He would select those who want to change. He would see to it that inservice education and education generally would be constantly subjected to the scrutiny of evaluation and feedback, or else cost reduction would control.

I have no major quarrel with these points. As I examined Haubrich's analysis in light of my own experience as a school administrator and in the light of observations which I have gotten from about the country, I conceive of his argument as either completely right or mostly right.

Let me make a few comments about what I regard as overstress and understress at some points in his paper--

As I view current developments, I feel that he may be overstressing somewhat the influence of the graduate school on what is happening and not happening in school systems; from a historical perspective I believe that his emphasis upon the power of the graduate school is absolutely right, but a growing number of schools do rely less and less on leadership from institutions of higher learning and more and more upon their own resources. The trend in this direction may be spotty; it is a trend. I know some school systems, as an illustration, that are more and more providing inservice programs or programs of professional growth activities for their professional staffs; these programs take a variety of forms, they may include work on methodology or teaching strategies, they may include work on organizational arrangements in the schools or on the production of materials. In a sense, the schools are saying, "We can do a better job than the graduate schools--we can relate the work directly to the problems and opportunities at hand; and we have the advantage of working in the local situation and, hence, our efforts do not go down the drain when school opens in September (Cf. Haubrich's remarks vis-a-vis summer projects which go down the drain.)"

Haubrich, in his description of the nature of the school enterprise, understressed the extrinsic influence of the public--the layman. The layman is an important part of the social milieu; the ecology of the lay public affects profoundly the character of the school system. I am talking specifically about the perception which the lay public has had of what constitutes adequate education, of what has constituted adequate education for the last third of this century. The American public school system is deeply imbedded in the network of systems supported by the culture and its defined roles; so long as Mr. Average Citizen continues to see adequate education as the education which he experienced a generation or two ago, we will continue to have massive problems with change and innovations. I would prescribe massive programs to educate our communities and the country as a whole, programs designed to alter the country's perception of what constitutes adequate education for these times.

I now wish to indicate where I wish to question Haubrich's emphasis:

1. If we only work with those school systems which want to change, how can we win others into that category?

2. If we stress techniques for creating an adequate inservice education and for setting up a method to finance it on a broad scale, should we not also elaborate techniques for using our money to support pro-

mising programs and desirable change (as opposed to change for its own sake)?

3. Mr. Haubrich implies that the teacher is a "low-level" functionary, and that our greatest push in elaborating training programs should be aimed at the middle level functionary such as the principal. Given the growing militancy of teachers, this view may not hold up very well for very long. We are probably going to have to assume that every teacher is as committed to his vocation as is the supervisor or administrator and proceed from that assumption. Incidentally, our experiences with "peer supervision" of teachers have shown the potential for leadership which exists in that level of the "hierarchy."

Accepting the psychological and social principles stated by Dr. Haubrich relating to the nature of the school, I would go further to hypothesize that something can be done to change some of the perceived roles of persons at various levels of the school hierarchy. Bureaucracy will stay with us. It is not all bad. But one's perception of his role within a bureaucracy can be changed. The nature of the organization has to be and can be changed. In plain language the organization must get out of the way of changing programs. To a significant degree I think that teachers will see to it that this comes to pass. The power and influence of the middle and higher functionaries is shifting to the lower functionaries. This may bother you some as it does me--but I think that it is true.

Discussion

A. "Change and Militant Groups": William Work, Speech Association of America: Group 5:

Our group accepted Haubrich's basic description of the bureaucratic structure--the need for studying it and coping with it as more than a fixed entity--as a system. We noted that bureaucracies are not static; if one is going to cope with them one has to keep abreast of their changes. And one has to recognize the useful features and dimensions in almost all bureaucracies if one is to avoid stock responses to them. But the key question with regard to the structure of the schools--once one has recognized that they are bureaucratic--is "What can be done with, for, and to their bureaucracy to render it more flexible, more amenable to change?" And we suggested that efforts to effect change might well capitalize on the larger political forces presently most actively demanding change in the schools: the militant teachers, the militant students, the militant ghetto community. Our group remained in some awe, I think, of the bureaucratic establishment--its ability to absorb change without moving itself, for it seemed to us that trying deliberately to change a bureaucracy is a little like trying to change the temperature of the ocean by throwing an ice cube into it. We regretted that thus far in this conference discussions of the creation of the climate for change have been dissociated from discussions of the substance of worthwhile change; one would hope that before these deliberations end today, we will move a little more in the direction of considering what the substance of change ought to be.

B. "The Homeostatic Nature of Bureaucracy and Linear Models of Causality": Robert Davis, Syracuse University: Group 7:

Group 7 had a very interesting discussion; I can't honestly report it all. It took an hour or longer, it would take that long to repeat it. We focused, particularly, on the homeostatic effect of the establishment; and we started by saying, "Where is the establishment?"

Possibly two remarks ought to be made here: first (I'm borrowing from a student of Erik Erikson's), if one really believes in a sort of linear model of causality to the point where one can only think of things as subject to a linear "domino" system of causes, one may never understand a bureaucracy. A bureaucracy is very much a chicken and egg thing (there isn't anything in a bureaucracy "which comes first"; it just gets built all together); second, the incredible ability of establishment to absorb change without changing needs to be exemplified in detail. The example of this feature of bureaucracies which I want to give is a trivial one, but that is exactly why I think it to be suggestive. At every level, even the most trivial, one gets shot down by what Dick Suchman calls the homeostatic propensity of the establishment. At this conference in our group session, we rearranged the tables in our group so we could have better discussions. We left the room. When we came back, somebody had efficiently put them back the way they originally were. A decision to change things did not change anything.

C. "The University, the Schools, and the Psychology of Resistance to Change": Dr. Dorothy Haupt, Merrill-Palmer Institute: Group 4:

First of all, we generally agreed that changes are occurring in schools; the problem may be the familiar one, the problem of bringing an efficient dissemination of information as to the kinds of change which are taking place so that the programs which represent serious kinds of change are not either over-publicized or lost in the barrages of criticism directed at schools which are "different" by those which are not.

When we discussed whether or not effective change in the schools could take place at the prompting of forces outside the school, we suggested that the institution outside of the schools which could promise the most benign sort of change to them, were it to intervene in their school life, is the university, and the idea that school staffs should be a part of university staffs, and vice versa, that the university faculty should participate in school classrooms, received a certain amount of support. Such a system might produce continuous responsible change. Moreover, the notion of establishing close school-university liaison is particularly relevant to a later point which I want to make about the preparation of teachers. If we are to change intelligently, we might look again at the procedures of business; e. g. at hiring a business manager for the schools, releasing the principal to get back to teaching, and releasing the more experienced teacher to help the less experienced teacher in the classroom.

At the same time as I express this sense that the schools are clumsy bureaucracies, I wonder how much the conservative part in us tends to hide behind the bureaucratic structure--to rationalize a personal failure to do teaching which is good with some such phrase as, "That guy up there won't let me." We wondered if we had enough courage and self-confidence to try out new ideas--our own ideas and our own convictions. This implied our actual psychological restriction may be our inner way of resisting change and holding on to tradition while we attribute the resistance to an outer source. Add to this the probability that our teachers are too busy to think, and that they have little energy left to pursue planning; busyness gives the teacher, at best, a means of excusing himself for his failure to develop ideas and convictions or to act upon them. At worst, it does much worse things to his capacity to urge intelligent change.

We can, however, place our faith in "the new breed"; we can, that is, if our teacher training programs are models--teaching teachers how to teach and encouraging learners to learn. Our faith in the new breed does not represent abdication, an escape, a retreat or a waiting period. We recognize that changes are occurring. Rather, it seems to me, this faith in our new teacher stems from our concern and planning for them. Unlike many of us, they do have extended and varied direct experiences in the classroom and in varied neighborhoods; they "try on" the role of teacher; they are encouraged to explore and experiment. I would hazard the guess, that they suffer less than did we in being exposed to those gross contradictions between what teachers are taught to teach (the processes they may utilize in helping children learn to learn) and the practices and procedures demonstrated to them over and again in their classes at the university or college and particularly in the Colleges of Education.

D. "The Red Herring of 'Bad Bureaucracies' and the Power of the Principal": Eleanor McMahon, Rhode Island College: Group 11:

I don't know how much I represent Group 11. Yesterday's chairman asked me this morning, as I was walking in, if I felt as hostile as I did yesterday; I assured him that, after hearing Haubrich's talk and having been classified in the Establishment with the rest of you, I felt convivial and dependent. We did not wholly accept Haubrich's description of the organizational structure of the schools as a "bad thing"; that is a description of the nature of bureaucracy which no rigorous sociologist would make. One has to be very careful not to characterize bureaucracy as itself bad, as apart from its functions and operations. I have some feeling, particularly at the end of some days, that the other bureaucracies with which the school system has to deal--the U.S. Office of Education, the Office of Economic Opportunity, the community action agencies--have an impact on the school system and its sensitivity to the needs of children which is not wholly good. I think that, for the most part, the effects of the outside bureaucracies are for the good; but occasionally they create real problems in the school organization.

Most of Haubrich's points were well taken: in particular we liked his idea that priority should be given to projects where there are strong linkages between colleges, universities, and public school systems and his ideas that there is a serious need for continuous evaluation even of projects which do provide for such strong linkages. I have been working on a project, funded by the Office of Economic Opportunity, and have been told that all of the money that our project had in its budget for evaluation has been tossed out because "Head Start" can stand on its own two feet in Congress and "Who needs to know anything about individual children?" I find such contempt for evaluation somewhat ironic.

I have indicated our general reservation with regard to Haubrich's description of the institutional, bureaucratic structure of the schools as "evil." We had other observations concerning some of Haubrich's more specific points. With Mr. Garrison, we felt that Haubrich has exaggerated the power of the principal; the militancy of teachers is rapidly cutting away at the power of the principal; one member of our group reminded us of Myron Lieberman's characterization of the principal as belonging to the "management sector" of the school population. Again, we had doubts concerning Haubrich's picture of the social process, a picture which only envisages change which can come from the top down. I personally have been involved in a project, Project Affect, a social studies project which was initiated by two classroom teachers. Its objective was to close the generation gap in the solution of social problems; from my experience of that project, I think that teachers can do more to change their situation than Haubrich intimated.

E. "Curricular Change, Curriculum Centers and the Change Process": Dorothy Seaburg, Northern Illinois University: Group 3:

Much of our discussion concerned the relationship between the curriculum reform movement, curricular change, and the question of the degree to which the schools exhibit a bureaucratic structure. Generally, it was argued that curricular change has been effected when teachers have been involved in the process of writing the curriculum; a basic instrument which can be used to create change of one sort then is the participation of teachers in the writing of curricula. But if teachers must write curriculum to change the content or style of what they do, we ought not to be overly optimistic over what curriculum centers can do outside of the particular locales in which they operate. A curriculum so created is not necessarily transportable; on the other hand teachers who have participated in NDEA Institutes may improve their teaching in such institutes and yet have little effect upon the classroom practice of their colleagues (e.g. where Nebraska teachers have been able to go out and hold in-service Institutes, they have been working with materials they helped generate).

If we take issue with Haubrich's conception that change necessarily comes from the top down, we cannot, I think, deny that even where teachers have created the material on which change might be based, an involved administrator is needed to give his blessing to the changes which teachers initiate; one of our participants described the hierarchic relationship as follows: "We have to get sufferance from the administrative powers-that-be at the same time as we involve teachers in creating whatever is required to make programs change to respond to kids.

We recognized that teachers need time if they are to effect change; they must be given released time; they must be allowed time to develop skill in group dynamics in being able to communicate ideas (Federal programs ought to begin to provide for released time). Both teachers and administrators ought to be exchanged from school to school so as to shake their sense of dependency in a fixed structure. For in any kind of effort to effect change the real changes we make are changes in people; the materials often get filed in a bottom drawer unless such changes are effected.

Finally we addressed ourselves to the question, "What changes should be made in teacher education programs to help teachers effect change in the schools of which they are a part?" We pointed out that more attention needs to be given to student teaching so that the teacher in training learns to use his own *self* in bring about change; we need to put our stress on those behavioral sciences which assist the teacher to understand the people he works with and what the forces of his person can be. We need to improve the academic content of teacher preparation programs and their bearing on what happens in the class to students. Such programs will permit teachers to know in what directions they may feasibly move programs so as to profit students intellectually.

F. "Autonomy: Forces Which Might Make For It": Brooks Smith, Wayne State: Group 8:

We discussed ways to break the "system" which the speaker was talking about. One of the ways in which the bureaucratic system may be broken may be through the growing use of collective negotiations as the means of dealing between teachers and administrative bureaucracies. Some of the people in the group were very concerned about negotiation: that it might bring about a kind of "mob rule," rule by the lowest functionary. On the other hand, negotiation may afford some hope of placing the teacher back into a position of responsibility for curricular planning and instructional planning. We could, perhaps, tie it into the autonomy of some of the English schools that we have

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been hearing about and perhaps give our school faculties some chance to regain some of the power over the curriculum which they ought to have.

Mr. Haubrich made one other point very strongly, i.e. the point that there is a great need for collaboration between the universities and the school systems. I would just like to mention here a publication that will be coming out shortly, one that I think many of you will be interested in; it is published by the Association for Student Teaching in the American Association of Colleges for Teacher Education and called, "Partnership in Teacher Education." This book described many of the partnership efforts being made by universities and school systems; it describes some of the pitfalls that may be inherent in these collaborative efforts, some of the promise that they hold. One runs into great sociological and political problems when one puts two large, formerly autonomous institutions together.

G. "Haubrich as McLuhan": Judy Craighead, New Orleans: Group 9:

Format: In order to obtain a consensus of opinion concerning Haubrich's presentation, our chairman drew a grid on the chalkboard to help measure our agreement, probable agreement, probable disagreement, or disagreement with Haubrich's ideas. After securing a vote, it was noted that the majority of the group felt that Haubrich's blast on the "those-responsible-for-education" hierarchy was warranted. I am not really sure that we really understood everything he said. I think that he might be labeled as the Marshal McLuhan of elementary education. When he says all these things, you think, "that's really good" and then you shake your head. And you're not quite sure what it really meant. But it really was a beautiful speech--just great.

Discussion: Perhaps my criticism of the experience peddling which our group was subjected to at the preceding session had some constructive element in it--perhaps not. In any case, at the beginning of this session, I was properly chastised by a member of my group for being unduly critical (I was only attempting to strive for candor). Alas, I was promptly (and to my satisfaction) rescued by other members of the group. At any rate, during this meeting and the one which followed, Group 9 functioned as an intelligent group of people who had something to say about the matters at hand.

Brainstorming with the idea of "What can we do and where can we start in order to improve or change our present educational system?" we became involved with the notion of looking outside the system for a starting point. Because we are all in charge of change, perhaps the place to begin the innovations is within the individual we's. As part of the hierarchy of the bureaucracy, we must first examine our own opinions and feelings before we attempt an outward overhaul of existing hierarchies and educational dogmas. Also, it is seldom beneficial to change simply for the sake of change. As Haubrich said, we can absorb change beautifully, and still not change at all.

Conclusions: One of the final comments made at our third session was that the trouble with the Tri-University project and the Triple T is that "they" just don't know exactly what they are trying to do. But who does? As one of our folk heroes has said:

" something is happening
But you don't know what it is
Do you, Mister Jones?"

- Bob Dylan

H. "The Purposes of Bureaucracies and the Relationship Between the Creation of Alternatives and the Encouraging of Change": William Ward, Northwest Regional Laboratory of Portland: Group 5:

I personally wish that our speaker had referred to some example of efforts to best the problems that he was talking about; some of these efforts are to be found on his own campus--in the Research and Development Center at the University of Wisconsin. It has been developing research units and instructional units which call for some reorganization of the school to put the teacher in a position higher in the hierarchy, making him responsible for specific decision-making in the development of the curriculum. Inasmuch as Haubrich was addressing himself to the necessity for making instruction an individual matter, both in the schools and in the colleges, he might have referred to the work that is going on in a number of places in the development of complete instructional systems for the preparation of teachers and for providing curricula for kids. Consider Bloomfield Hills where they have done a completely individualized program based upon an "instructional system" design which extends from the first grade through the twelfth. The teachers have written the behavioral objectives, and the curriculum modules that are supposed to lead to the attainment of the behavioral objectives. Again, the Research and Development Center at the University of Pittsburgh and the Regional Educational Laboratory in Philadelphia, "Research for Better Schools," have both developed ways to give individually prescribed instruction in mathematics, reading, and science, instruction which again enables a student to enter the program at his own level and exit at a time adjusted to his peculiar intellectual development. And the teacher preparation program which is related to these projects also uses the same kind of instructional procedures.

Perhaps the best way to intervene so as to affect the bureaucratic structures is to create viable alternatives to the present structure, alternatives that are acceptable to some members of the present bureaucracy which make it feasible or plausible for these members of the present bureaucracy to shift some part of their power in order that their organization may better attain the objectives for which it exists. Institutions become bureaucratized because someone feels that that is the best way to pursue and attain the organization's objectives. If anyone wishes to change an institution's structure, he has to create an alternative procedure which will gain the ends of the organization in an obviously less destructive way.

I. "The Principal and the Bright Teacher": Miriam Wilt, Temple University: Group 1:

After paying some attention to the blocking tactics of some member of the bureaucracy, after looking at the "State Department of Education" as a whipping boy, we eventually arrived at a most important question in the area of teacher education: what to do to bring people to make a creative endeavor in the world of teaching. We took one look at the principal and decided that perhaps, at his intermediate level, we ought to begin working on necessary innovative tactics, developing in the prospective and inservice principal a philosophy for creating the kind of environment in a school in which teachers can be free. And, if we do this, it may be that we won't lose all of those starry eyed, bright, creative people to the conformities that they find in the schools. We can give them the kind of support they need.

J. "Change and American Impatience": Herman Kranzer, Temple University: Group 2:

[Kranzer again raised the issue of the extent to which school change will be dictated by parent groups and union groups.] One of the problems with the emphasis which Haubrich gives to change is that "change" can also, imperceptibly or perceptibly, represent more-of-the-same, mistakes and all. We should perhaps devise "models-for-change" which would be helpful. We have a tendency in our culture to be impatient, and one sometimes wonders whether we are not making a mistake and acting too hastily in measuring change.

We all share in the blame for lack of creative change insofar as, in the educational process, we curb the creative person.

Education for Stupidity
(Toward a Sociology of Ignorance)

Jules Henry
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On March 19, 1964, in its advertising feature column, the New York Times reported that Kenyon and Eckhardt, a big advertising agency had discovered that

> The average ad . . . tended to be only half as effective in the college group as in the high school group.
> . . . better educated women were found far less susceptible to 'product demonstrations' used in commercials . . . Yet these demonstrations proved highly effective in heightening the product interest of women with a high school education.

Concluding his report, Mr. David C. Stewart, president of Kenyon and Eckhardt, said,

> America's education explosion is confronting the advertising business with a new series of problems for which we must find a new series of answers.

I think the answer is obvious: keep the college student at the high school level--and don't raise the high school level, for it is clear that if the American economy is to remain sound, "product demonstrations" must remain "effective". Yet, Mr. Stewart need not, perhaps, have been so pessimistic, for year after year, survey after survey documents the ignorance of the American people. In the high schools and colleges, advertising has strong support in the institutionalized stupidity systems. Six years ago, Columbia College

> . . . 'suspended' its compulsory sophomore course in Contemporary Civilization . . . as a regretful admission that contemporary civilization had become too complicated and specialized to be taught by the ordinary contemporary /college/ teacher. (The New York Times, July 10, 1961)

This is a nice way of saying that there are not enough college instructors with brains enough to put our "complicated and specialized" culture together; the education system has tried to ensure that nobody shall be able to put it together, unless motivated by immense rewards. We can be certain, however, from the world-wide success of numerous American corporations, that many of them, having interests in all continents and under a great variety of political and economic systems and technological conditions, have highly paid executives who have put the "complicated and specialized" world system together inside their heads--in their own way.

It is the purpose of this paper to illustrate the development of legitimate social stupidity in elementary and high school in the United States, to illustrate how _in_ability to put the "complicated and specialized" culture together is taught in school and to show, also, how incapacity is consolidated by fear.

By "legitimate social stupidity" I mean stupidity that is relevant to social goals and is legitimate because it is related to those goals. This means that throughout their schooling, children must be given subject matter that confirms legitimate stupidity and that whatever challenges it must be withheld.

Text Books

In an effort to document the hypothesis of the necessity for training children to legitimate social stupidity, I chose at random from a large assortment of school texts in the Washington University library. Because of their weight alone, some of these books would discourage children's interest in learning. For example _A History of the World_, Alice Magenis and John Conrad Appel, published by the American Book Company and _American History_ by Avery O. Craven and Walter Johnson published by Ginn and Company weigh three and a quarter pounds each, and _Economics_ by Kennard E. Goodman and C. Lowell Harriss, also published by Ginn and Company, weighs two and a half pounds. If a child has to carry three such books to school every day, the nine pounds must surely make him wonder, sometimes, whether it is worth it.

I did not analyze all the selected books for the same issues but perused them with different aims in mind. Thus in a book on economics I looked for some treatment of prices and business cycles, in a history book I looked for discussion of war, The Great Depression, the Negro problem and so on. Thus I have not been systematic, yet I think that what I shall say about the books gives a good idea of how well they perform the function of instilling socially legitimate stupidity in our children.

All the books give some information, but I am more concerned here with gaps--with the holes in the mosaic of information, with the lacunae, that make it impossible, eventually, even for an instructor in Columbia to put together for college sophomores an intelligible account of our "complicated and specialized" world. I start with the Negro problem.

Stupidity About Negroes

Teacher's Edition of Basic Social Studies 4. Esther Aschemeyer seems to be the principal author of the teacher's guide to this book, while the principal author of the pupil edition seems to be Adaline P. Hagaman. I say "seems" because it is not clear, from the way the publisher has arranged the names, who is what. The "director" of this book--or series of books--is Thomas J. Durell and it is "critically reviewed"--either the book or the series--by Phillip Bacon, Professor of Geography, Dean of the Graduate School, George Peabody College of Teachers. Drawings, maps and charts are by other people. Thus a "team" was assembled by Harper and Row, presumably with the best advice they thought they were getting, and published in 1964.

Let us have a look at what Basic Social Studies 4 has to say about cotton in the United States. The section on cotton in the United States extends from page 79 to page 84. Half of page 79 is a cartoon picture of a white boy, about eleven or twelve years old, standing up at the front of a classroom, in front of other white children, and looking very uncomfortable. This is "Chuck". The unit revolves around Chuck, who lives "on a cotton farm" and has to give a talk to the class about cotton, to children who also live on "cotton farms". About two thirds of pages 80-1 are covered with a large picture of a cotton field with nine white children standing in it. There is also a neatly dressed white man. Half of page 82 is occupied by another picture of white children in a cotton field and about a quarter of page 83 is taken up with a front view of a mechanical cotton picker. At the controls is a white man; and one can tell very little from the picture about how the machine functions. Page 84 is review and instructions to the children about what to think about. The text contains references to fertilizing, weeding, defoliation--"Does the company expect you to put chemicals on these plants to make the leaves fall off before you harvest the cotton?"--and cotton picking machines. This is all. Page 132 of the teacher's guide has a number of sentence completion test questions: Question one requires that the student remember that cotton needs a "warm" climate, and the right answer to Question two is that there are truck farms in the "Rio Grande" valley.

In 1961 Professor Walter Johnson and Avery O. Craven, both of the University of Chicago, wrote an American History published by Ginn and Company, for high schools, in which the Negro is discussed so as to give the impression that all his problems are on the way to rapid solution (pp. 640-1), and to prove it, on page 641 there is a picture of Jackie Robinson playing first base. In his 1965 high school history text, The United States Since 1865, also published by Ginn and Company, Professor Walter Johnson seems to have reversed himself, for on pp. 468-477 he gives as honest an account of the Negro situation as one could expect to find in an American text book; yet, strangely enough, the old "better and better" text, that one encounters on page 641 in the 1961 text, is retained unchanged--even with the picture of Jackie Robinson--on page 409 of the new book. How does one account for this contradiction? If one chooses to stop reading at page 409 in the new book, he can feel that things are improving; if he continues to page 468 he will feel altogether different.

I did not carefully turn every page in Your Life as a Citizen by Harriet Fullen Smith, George G. Bruntz, with Ernest W. Tiegs and Fay Adams, published by Ginn and Company in 1961 but leafing through it several times I saw no Negro face, and the only contemporary references to the Negro are on pages 220-21, where it is stated that Negroes have equal protection under law.

Our United States, A Bulwark of Freedom by Harold H. Eibline, Frederick M. King and James Harlow, published in 1961 by Laidlaw Brothers has nothing at all on the contemporary Negro, and precious little about him at all.

Basic Social Studies 5, published in 1964 by Harper and Row, is another one of those faceless "basics". It is an American history and the authors are O. Lawrence Burnette, Jr. and Lettie Lee Ralph, with Thomas J. Durell as "director". It is a cute book, different from the usual run of American history texts, in that it is organized around a number of quite confortable families, who move around in the U.S. Aside from this it is the same old packaged-American History. The modern south is discussed, for example, on pages 353-356 with no reference to Negroes, and all faces are white. Though the book carries the student into the presidency of John F. Kennedy, the latest reference to the Negro is the Civil War.

Stupidity About Labor

On page 370 of Craven and Johnson's American History is what looks like a painting or lithograph of the "railroad strike" of 1877. The legend beside the picture states:

> Here workmen forcibly drag firemen and engineers from a Baltimore and Ohio freight train in West Virginia. What weapons do you see?

It looks as if some people have guns, but it is impossible to tell from the picture who the people are. Nevertheless the implication of the text in question is that they are workers.

Craven and Johnson's treatment of organized labor is evasive, unclear and superficial. Thus, the reason for the decline in strength of the Knights of Labor is merely that they lost some strikes. Of the Homestead strike the authors say:

> A bitter strike took place in 1892 at the Homestead Plant of the Carnegie Steel Company. The strikers, angry at the company's treatment of them, shot it out in a pitched battle with the Pinkerton detectives hired by the company. The state militia finally ended the strike.

Of the strife between labor and "militarized" management* that broke out after the Civil War because of the miserable pay, humiliation, lack of security and dreadful working conditions, Craven and Johnson give us the following interpretation:

> Communication between management and labor had broken down. Consequently, both parties at times nursed unfair notions about one another. What men do not know very often bothers them a good deal more than what is familiar.

In general, labor is treated nervously in history books. Our United States, unlike Craven and Johnson's American History, however, is willing to state, on page 463, that

> Conditions in many factories and plants grew worse. Men worked twelve to fifteen hours a day, sometimes at tasks beyond their strength. Factories for the most part were poorly lighted and ventilated. Faulty equipment resulted in many fatal accidents. An injured worker received no hospital benefits or other compensation.

Our United States points out that entire families had to work because the earnings of one person were not adequate to support a family and that children worked long hours in factories. The long and bitter war management waged against unions is not mentioned. Yet the authors say that "Picketing, the efforts of strikers to prevent the use of strikebreakers, has often led to rioting and bloodshed", thus placing the blame for labor violence on the workers.

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* The Encyclopedia Britannica's term. See "Labour."

The treatment of labor and of unions seems more balanced in high school economics texts like Applied Economics by James Harvey Dodd, South-Western Publishing Company, 1956 and Economics by Kennard E. Goodman, Head of the Social Studies Department of West Technical High School, Cleveland, Ohio and C. Lowell Harriss, Ph.D., Professor of Economics, Columbia University, published by Ginn and Company in 1963. But even they draw a thick curtain in front of the "militarized" opposition of management to labor unions and strikes.

Economics

In high school texts depressions are handled as a phase of "business cycles", and business cycles are discussed as if they are inherent in economic systems as gravity is in the universe. "Let's summarize some of what happens during a cycle," say the authors of Economics by Goodman and Harriss on page 292, "first a contraction, then an expansion."

> Let us assume that business has begun to drop off here and there. Why? Perhaps major construction projects taper off, and nothing replaces them.

Thus business tapers off because it tapers off.

> Or high prices discourage consumer buying at home and exports to other countries. Or one or more factors may have worked a depressing influence.

Note that nothing is said about what brings it about that prices discourage consumer buying; that is, nothing is said about the inequality of income distribution that "discouraged" the consumer that brought on The Great Depression. Again there is the implication that depressing factors "work a depressing influence", with no explanation of the origin of the depressing factors in the first place. This presentation is followed by a reasonable examination of the cumulative, snowballing effects of depressions. Then, on page 294, the authors say

> After a time, the decline slows down and then stops. A movement upward begins. What causes the 'turn around'? . . . Some or all of the following may help: (1) Production

> costs fall, that is, costs per unit. Workers try harder to produce more per hour. Management finds ways to raise efficiency. (2) Some businesses by reducing prices stimulate sales and employment. (3) Inventories get unduly small and need replenishment. (4) Government pumps money into the income stream by spending more than it collects in taxes.

There is no elaboration of these statements and the fact that in The Great Depression the "decline" did not stop and would not have stopped had it not been for Government intervention, is not discussed, and the student is left with the general idea that somehow depressions always stop by virtue of the dynamic of the cycle.

Consumer Economic Problems' senior author is W. Harmon Wilson, Vice-President of South-Western Publishing Company, publisher of the book! Coauthor is Elvin S. Eyeter, Chairman, Department of Business Education, Indiana University. The book came out in 1956.

The authors treat depressions as natural expressions of the "business cycle":

> Decline. In past periods of prosperity eventually we reached a stage when there was overproduction; the selling of the merchandise became a critical problem . . . ; competition became keen; profits were reduced; production began to lag; gradually employers started to reduce wages and to lay off workers . . . et cetera
>
> Depression. Just when the process turns into depression is difficult to determine. When business in general is bad, the period is referred to as a depression. In other words, business activities are depressed. In general, depression is considered to be the low point in the cycle . .
>
> Recovery. Eventually recovery begins. Prices and costs readjust themselves. . .

On page 679, among "Causes of the Business Cycle" the authors note that, "Purchasing usually lags behind production power. Not enough of the income received from production is put back into purchasing power, and the income from production is not sufficiently widely distributed among all the population to create widespread purchasing power." Yet there is no follow-up on this statement, which clearly implies that if income were "sufficiently widely distributed" there would be no "decline" or "depression", and why "purchasing lags" and why income is "not sufficiently widely distributed" are not discussed.

There is no reference to the subject in the "Summary", in the "Textbook Questions" or in the "Discussion Questions". Thus a major preoccupation of contemporary academic and government economists is never referred to again in the book.

The handling of The Great Depression by history books is fatuous. I give just one example from Our United States, Bulwark of Freedom. The discussion is introduced by a personalized fiction, characteristic of the new vein in social studies books: a worker, fired because of lack of business in the plant, asks his foreman:

> 'Is the overproduction Mr. Hill spoke of today responsible for the stock market crash?'
>
> 'It's all part of the problem', the foreman explained. "It's difficult to tell exactly what is responsible for something like a market failure. One of the things that caused the crash was overspeculation . . . When a lot of people begin to speculate, by buying stock in a corporation, the market price of the stock goes up. If someone who owns a large quantity of the stock suddenly begins to sell if for whatever he can get, the price of the stock falls and others who hold that stock must sell out quickly or take a loss. In other words, he forces the stock market price down.'

This is all Our United States has to say about the causes of The Great Depression.

Poverty and Related Issues

The only poverty discussed in Economics by Goodman and Harriss is rural poverty. On pages 157-161 they point out that "Tens of thousands of farm families are at the lowest income levels in our country." They then discuss rural poverty as if it were merely a phenomenon of small yield, poor land poorly maintained and poor management. There is also a reference to migratory workers earning low wages and having no political influence. The book's index has no reference to "poverty" or "poor".

Applied Economics has no discussion of poverty but points out on page 409 that inequalities in income may be due to success in business, to inherited wealth or to having "exceptional talent". There is a reference to poor housing on page 322:

> The underlying reason for the existence of the poor-housing and slum areas in cities is that most of the people who live

> there cannot afford to pay enough rent to make it profitable for owners to construct and maintain better houses.

Communism and the Soviet Union

In 1962 there was a brief period of worry that our children were not learning anything real about communism and the Soviet Union. In The New York Times of July 4, 1962, Harry Schwartz said:

> The anti-capitalist and anti-American indoctrination given Soviet pupils in all Soviet schools is being matched by anti-communist and anti-Soviet indoctrination in many American schools.

The opinions of a number of American educators deploring the teaching about communism and the Soviet Union are quoted, the curricula on communism in a number of schools are cited and several examples of hysterical anti-communism from school curricula are given. Sharing the page with Mr. Schwartz's article is an account of a report issued jointly by the National Education Association and the American Legion. The report says:

> In teaching about communism . . . it is not neccesary to maintain the position that everything about communism is a failure . . .
>
> The Communist economic system . . . 'has not been without its successes' and has brought the Soviet Union in forty years to a position where it is one of the world's great economic powers . . .

Beyond the Americas, by Paul R. Hanna, Lee Jacks Professor of Child Education, Stanford University, Helen F. Wise, Elementary Supervisor of Public Education, Kalamazoo, Michigan, Robert A. Lively, Associate Professor of History, Princeton University, published by Scott, Foresman and Company in 1964, shows the effects of this national concern about American children's ignorance of the USSR. Here are some selections from the book:

> p. 125: The giant bear has emerged from its snowbound cage and has thrust its paws around the earth and into outer space.
>
> When you have finished reading "In the Soviet Union," you will know more about communism. You will see the diff-

> erences between our system of government, which upholds freedom, and the Soviet system, which restricts personal liberty. To preserve the freedoms we cherish for ourselves and others, we need to learn all we can about Soviet threats to these freedoms.
>
> page 150. Life on Soviet farms is hard, but for many city workers it is even more difficult . . . .
>
> People who have always worked on a farm find city life full of new hardships. They are far away from the food supply.
>
> page 151. City dwellers who waited for years to be assigned a residence in the new apartment buildings find them disappointing.
>
> page 159. The constitution of the U.S.S.R., with bill of rights, reads much like the Constitution of the United States. It guarantees freedom of speech, press, assembly, religion, and education. But it states that these freedoms are reserved for the working class . . .
>
> How does the [Communist] party, to which less than 5 per cent of the people belong, continue to rule the lives of all the people in the U.S.S.R. ?

There are also some positive statements:

> page 144. Towering over the city is the forty-seven story University of Moscow, the largest University in the Soviet Union. Moscow has a wide variety of colleges and technical schools. It has many museums, exhibition halls, opera houses, and theatres for drama and ballet, including the famous Bolshoi Theatre. Like most cities of the nation, it has stadiums and arenas for athletic events and many houses of culture, or centers for recreation, reading, and the pursuit of useful hobbies.
>
> page 151. No matter where people live in the U.S.S.R., the community center of culture and recreation is the focus of activities.

The book says nothing about the Soviet system of social legislation, rise in the standard of living, eminence in science, abolition of illiteracy, etc., etc., etc. But there is a "table" on page 151 with the usual comparisons between what things cost in the U.S. and what they cost in the

U.S.S.R.

The Soviet Union by Michael Petrovich, Professor of History at the University of Wisconsin, published by Ginn and Company in 1964, is more sophisticated. It begins by saying some nice things about the Soviet Union: it has a fine culture, it is one of the "world's leading nations". It is, however, "the greatest revolutionary force in the world today" (page iii). The causes of the Russian revolution are not given. On page 29 workers and "the middle class" are given equal credit for the revolution. On pages 40-43 the book emphasizes repeatedly that "the people" were overwhelmingly against Lenin. On page 32 Russian fears of the U.S. are presented as irrational, and the animosity of the Russians to the U.S. is attributed to "dislike" of us.

The Russian civil war is described on page 45 as "very bloody and cruel" but the allied intervention in 1917-8 is not mentioned.* The map on page 31 entitled "Invaders of the Soviet Union" shows "German Knights 1242", "Tartars 13th Century", "French 1818" and "Germans 1941-1942" but does not show the allied intervention.

On pages 52-3 the Soviet Union's ability to defeat the Nazis is explained as due, "in part", to help from Britain, France and the United States; but the Soviet Union is awarded no part in the ability of France, Britain and the United States to defeat the Nazis. On page 53 it is stated that during the war "At least seven million Soviet citizens lost their lives . . ." although no U.S. encyclopedia gives such a low figure.** On page 56 is the usual statement that the Soviet Union is a dictatorship ruled by the Communist Party, which is very small relative to the total population of the Soviet Union. The book states that "it is much better not to have been a member at all than to be an ex-member," but says also that the party "recruits" the best from all walks of life. However, "only about one fifth of its members are women, despite the fact that there are still more women than men in the U.S.S.R. as a result of war losses among men, and peasants and certain nationalities are poorly represented.* (page 57) On page 58 we learn that the purpose of the All-Union Congress is "good advertising because it gives the impression that everything is run in a democratic way." The following quotes further illustrate the negative trend of the book:

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* The most recent reference to this in the American press is in the interview in the New York Times of November 17, 1967 with Mr. Norman Armour, Third Secretary of the U.S. Embassy in Petrograd during the last days of the Old Regime. Since the 1918 intervention is mentioned in several U.S. encyclopedia articles, textbook prudery on this score is puzzling.

** Encyclopedia Britannica, 1967 states that in the first 15 months alone the Soviet army suffered 5 million casualties. Colliers Encyclopedia 1967 gives the most usually accepted figure of 25 million military and civilian dead. Colliers also adds, "20,000,000 children who might have existed given normal growth rates and an absence of war, failed to get born in 1950 or survive until that time."

> page 59. Since the real central authority in the Soviet Union is the Communist Party, it is difficult to see in what way any republic can make independent decisions.
>
> page 60. There is nothing 'voluntary' about the Union. Force has been used to keep national territories such as Georgia, Turkestan, and the Ukraine from leaving the Union.**
>
> page 69. Whom do the people work for in the Soviet Union? The Communist answer is that they work for themselves, since all the factories, mines, stores, and other state properties are owned by the people as a whole. Yet who manages the system? The government. In this way, then, practically every worker in the Soviet Union works for the government.
>
> page 90. Yet Soviet science is not free . . . Soviet scientists carry on communications with satellites thousands of miles away in space, but their telephone system is wholly inadequate. They can land machines on the moon, but they have yet to produce quality shoes at an inexpensive price.*** Soviet men can fly into space, but most Soviet citizens

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* No comparable data on party memberships are given for the United States. A diligent search by the reference department of the Washington University library failed to turn up any figures on membership in the Republican or Democratic Party. One publication does give the number of persons voting in the last presidential election as party "membership". See Encyclopedia Britannica Book of the Year 1966. p. 622

** There is no reference to our own Civil War - our own war of secession.

*** I hope that anybody who has been able to find such shoes in the United States will let me know about it!

> cannot get permission or money to fly alone to Vienna, Paris or London on a private visit . . ."

The book speaks, however, with unstinting praise of the system of social legislation and education and lists some of the U.S.S.R.'s famous scientists.

The *Economics* of Goodman and Harriss, has the following to say about the Soviet Union:

> page 471. *Understanding our rival, Russia*. Much as we hate the fact, realities force us to acknowledge the threat of a dangerous rival. In spite of inefficiency Russia's economic power is growing, especially in military production. To deal with the Communist menace most effectively, we must understand the underlying economic system.

> page 472. Russia's leaders are notoriously guilty of ignoring facts.

The whole of the "underlying economic system" is treated in one column on page 473.

War and The Bomb

This paper is getting too long to go into the details of text book handling of these problems. Without exception, however, the analysis of the origins of the two world wars is handled superficially, and United States complicity in bringing them about, and the possibility of any war at all ever being avoided are not examined. Responsibility for the wars is placed on the shoulders of those "others". Let us look, for a moment at the treatment of war and the atom bomb in *A History of the World* (second edition) by Alice Magenis and John Conrad Appel, American Book Company, 1963.

> page 515. On August 6, [1945] the world was stunned by the news that the first atomic bomb had been dropped on Hiroshima. It leveled three fifths of that city of nearly 350,000 people . . . On [August 9] the second atom bomb fell. This time Nagasaki was hit. The following day Tokyo offered to surrender.

Note that no casualities are mentioned. On page 518 there is one question about the bomb: "Why was August 6, 1945, an important day in history?"

The Korean war is not discussed at all, but the book states, on pages 553-4 that after election, "Eisenhower soon achieved a truce in Korea, where the North and South Koreans had been fighting for three years." There is nothing in the text to suggest that the United States armed forces were in Korea at all. Of the reasons for Japanese-American hostilities in World War II, the book says, on page 511:

> /̲Hideki Tojo̲/ saw an opportunity to get control of Asia while the other powers were busy in the Atlantic. Japan attacked Pearl Harbor . . . on December 7, 1947.

There is room here now only for some further references to treatment of the atom bomb. American History states that in Hiroshima there were 100,000 casualities, but there is no analysis of who these "casualties" were, (i.e. mostly women and children) and nothing is said about the second bomb. In Beyond the Americas the atom bomb does not appear in the index, and a careful checking of all the references to Japan in World War II does not turn up a discussion of the bomb. On the other hand The United States Since 1965 gives some honest material on pages 394-5. Good social science depends more on courage than on brains.

Before going further it is necessary to point out that as chief of the analysis section of the United States Strategic Bombing Survey I went to Japan in October 1945 to study the effects of the bombing of civilian population centers on the population's willingness to resist the U.S. We turned up, at that time, the fact which has since become common knowledge, that long before the atom bomb was dropped, it was known to President Truman that Japan, through the Emperor, was suing for peace. The following, from Our United States, is therefore wrong and distorted from several points of view:

> pages 575-6. President Truman warned the Japanese to surrender or face the consequences. When he received no answer to his warning, he authorized the use of the atomic bomb . . . The main part of /̲Hiroshima̲/ was wiped out.
>
> Two days later an atomic bomb was dropped on Nagasaki with the same devastating results. The Japanese leaders, realizing that it was hopeless to continue, asked for peace.

It will be noted that here again there is no reference to casualties. There is also no reference to the bomb in the review at the end of the chapter, no question about it on page 577 under "What do they mean?" and nothing about it under, "Things You May Wish to Do", "Remembering Your Geography" or under "Milestones" on pages 577-8. Thus the student is invited to forget the bomb.

Imperialism

Imperialism--British, American, French, etc.--is another delicate area in social studies. Yet the writers of these books are equal to all challenges. Beyond the Americas has the following to say about Britain in India:

> page 342. Under British Rule. During the seventeenth century, Dutch, French, and English competed for the wealth of South Asia. By the latter part of the eighteenth century, Britain gained control of most of South Asia. For many years, the British had been developing important trading posts at Calcutta, Madras and Bombay. When Britain finally assumed complete control in 1858, the Mogul empire had fallen apart and the whole area was in a state of confusion.

The perduring, destructive effects of British rule on the Indian economy, Britain's responsibility for the "confusion" and "falling apart", are not discussed, nor, indeed, Britain's right to be in India at all.

On page 342 a paragraph is given to the strife between Hindu and Moslem; then on page 343 it is stated that

> Gradually some Hindus and Moslems came to believe that if India were to gain independence from Britain its problems would be solved . . . Finally Britain promised that independence would be granted in 1948.

So much for India's struggle for independence. Here are the questions asked at the end of this section on South Asia:

> 1. Name the chief natural regions of South Asia. Why are the river plains the most densely populated areas? 2. Account for the seasonal changes in India. What crops are dependent on the wet monsoons? What crops grow during the period of the dry monsoons? 3. Give reasons for the unfriendly feelings between Hindus and Moslems.

A History of the World has the following to say about American absorption of Hawaii:

> page 440. A new queen came to the throne in Hawaii in 1891. She restricted the rights of foreigners, whereupon the Americans living there organized a rebellion and overthrew the queen.

The Spanish American War is given two paragraphs on page 440, where the causes of it are stated to be: (1) "Misrule" of Cuba by Spain. (2) "Riots" "interfered" with American Business. (3) "Cruel government" of colonies by Spain. (4) Blowing up of the battleship Maine. In a later paragraph it is stated that "The Filipinos did not want American rule any more than they wanted Spanish rule. It took three years of warfare to quell revolts and restore order there."

On page 106 of the "Workbook" that goes alone with this "history" the students are asked only to ". . . state three ways in which the Philippines were aided by American control."

Conclusions

The purpose of this paper has been to illustrate the development of legitimate social stupidity in elementary and high schools in the United States. I have shown how, through leaving out and distorting information the content of textbooks strives for the goal of stupidity. There is always a question of how much information the members of any culture may be permitted to have; and throughout history it has been assumed that most of the population should be kept ignorant. It was, perhaps, the condemnation of Gallileo that first brought the legitimacy of this assumption into question. At the present time, let me repeat, for the first time in history, it is assumed that everybody has the right to know everything at any time. Where will it all end? I shall argue that ignorance will end in disaster.

In any modern democracy the people in power should ask themselves, Where is the point at which if people know too much they will embarrass us, and where is the point at which if they do not know enough it will be catastrophic because the people will be so unintelligent they will be unable to judge any issue and so will easily be lead to disaster? I have showed in this paper how the world is presented to children and adolescents in such a way that they do not get from school the information necessary to enable them to form an intelligent opinion about the world. College continues the work of instilling ignorance. What the people who run us permit our children to learn is governed by their fears--what we are permitted to learn is sifted through the fine mesh of fear and self-serving interests.

But why do text books ever change? With all its defects, Professor Petrovich's book was not possible in 1954. Why is it possible in 1964? Why is it possible to print Michael Harrington's The Other America now but not in the 1950's? Why do we have to wait until oceanic, even disastrous change seem to make it "safe" to print the truth instead of making the truth we print change society? Clearly the same fear, the same self-serving, governs those who make the books as those who have the power to say "yes" or "no" to the publication of a book. The disgrace is that the textbook writers should be willing to commit their guilt to print. I remember a meeting at a university not so long ago, when a professor in a school of education of great prestige told me he was writing a textbook in social studies that "pulled no punches". But this can mean only that in the past his books had "pulled punches"; and having read them I know they did. How can people "pull punches" when they are writing for our children? Surely it must be because they cannot see the "complicated and specialized" effects that teaching children to be stupid have: effects so complicated and specialized that they will destroy the world. The inability of children to understand war, the bomb, the Negro problem, the Soviet Union, imperialism and so on, has brought us so close to universal annihilation that we can probably never turn back.

Critique

Fred Gearing
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Some few weeks ago I encountered what seemed, for a brief moment, to be a most startling educational innovation. Some friends and I chanced to go to a Chinese restaurant. We were sitting around having a drink; they brought the fortune cookies; we were idly chatting, and opening the fortune cookies, and suddenly my friends, one by one started doing a double take. The fortunes were coming out "Wealth is not beauty" and candid things like that. I thought: fortune cookies, San Francisco, hippies, and--exciting thought--a "Tell It Like It Is Fortune Cookie Factory." Perhaps the organizational octopus that Mr. Haubrich described to us yesterday found them out, or if not, this cultural miasma that Mr. Henry has told us about today may have found them out. Unfortunately, I don't see those fortune cookies any more. Which leads me to Jules Henry's paper.

The thesis is rather direct and simple, isn't it? We're finks. I changed the pronoun--not "they" the text book writers, but "we"--though I understand that not a few of you were already on the spot and therefore are not particularly affected by that change. I want to include us all. Surely, Mr. Henry was asking us to look at but one little snip out of a much larger, complete system. If students are, indeed, being educated to stupidity, these text books that Henry asked us to attend are but a small part of a wider process. Besides, I feel uncomfortable pointing a finger. Let me therefore suggest that each of us might, in his own individual way, search out those little and big occasions when each of us, from the variety of our particular positions, fink out--do our own bit in helping to educate to stupidity. My own position is not in the schools, though I spend a good deal of time there. Nor is it in the training of teachers, _per se_, though future teachers do wander through my classes. My position is in the liberal arts college and the graduate school. There is, after all, some mystery, even if Jules Henry's descriptions of these high school text books is adequate, as to how that misinformation ends up in the heads of students. For example, I wonder: Why doesn't the teacher (or the administrator or the Board) blow the whistle on the book? So I remind myself to ask, what are you and your immediate professorial colleagues doing, Gearing? What is the professorial version of finking out? The answer might best be conveyed if one could somehow gather, from the liberal arts colleges, about 20 little vignettes on video-tape; these need not last more than 2 minutes; they should be randomly selected, all should be in respect to one moment in time. The moment is that moment when a student comes to his or her professor of anthropology or whatever discipline and says to him, "I've decided to get a teaching credential." I think that you know the content of the next two minutes of conversation in virtually all of those 20 instances. I think you recognize, too, that large things happen in those minutes to those teachers-to-be, things which go far in shaping the very role-perceptions, the sense of self and self-worth, of those teachers through total careers. The writers of those texts may be finking out; but I doubt if any of us are home free, when one looks at the total system which educates to stupidity.

We've heard, now, two rather disturbing papers. This conference is supposed to be the reality-oriented aspects of a wider series of deliberations; it could very well be we have gotten more reality than we bargained for. Jules Henry, as many of you know, is one of God's angry men. We have to have God's angry men. Today he often seemed the opposite of angry; one has to cry or laugh, and today he frequently laughed. However, the general tone of his paper, as you fully well recognize, was despair. The tone of the Haubrich paper, too, was basically despair. We earlier heard some very interesting things about language; we ought to recognize from those linguistics papers, that, while we might infer from Henry's paper, "It's the despair that makes him angry," it is also true that Henry's description of the despair is a way of expressing his anger, "It's the anger that makes him see despair." To put it in the linguistic phrasings that we earlier heard, it may be that Henry's paper is couched in transitional language, somewhere between expressive and referential.

The books, in any event, seem objectively to be pretty bad. The general directive, if there is one that can be derived from Henry's paper, is, "We have to tell them--tell them not to write like that anymore." I'm reminded of a story that my good friend Robert Hanvey, of the Anthropology Curriculum Study Project, told me. It's about a farmer who put an ad in the paper, "Strong, young, obedient mule for sale." A second farmer bought the mule, and he took it home, and the next morning he harnessed it up, and he tugged, and he pulled, and he whacked at the mule's hind end, and the mule wouldn't budge. So he called the first farmer, and said, "What do you mean, obedient?" So the first farmer said, "I'll be right over." He came; and there was the buyer, still tugging and hauling and pulling and cursing, and the mule still standing. The seller said, "I forgot to tell you something. Excuse me." He looked around, and standing against the barn was a fence post about six inches thick and five feet long. He picked up the fence post, and he walked around in front of the mule, and he took a full swing, and he hit him right between the ears; then he took the reins and gave a gentle tug, and the mule dutifully followed. And he said, "You see, first you have to get his attention." I have, I'm afraid, no great faith in moral suasion, not where complex behavioral systems are involved.

I don't know whether Jules Henry would be encouraged, or his despair would be deepened by the recent events in California--the affair over Land of the Free. It's a junior high school text with a breath-taking thesis that runs: freedom didn't materalize full-blown when the founding fathers found those nice phrasings, but freedom has proved to be something of a task, and indeed, it's a task that we haven't quite finished. The uproar that followed was widely reported. Superintendent Max Rafferty, it turned out, helped save the day, or so far, by calling attention to the fact that it's the strongest anti-Communist book he knows.

One comment about the conference generally and then a rather brief point about Henry's paper in particular. I was startled to recognize, in commentary on the papers of this conference, that these papers are being read by some of us as directives for educational engineering. I mention this simply because my own comments are not in an educational engineering, or any other kind of engineering, frame. My comments are in a "we can put the idea in our heads, and then we can see better" frame. My comments about Mr. Henry's paper are to this purpose.

We do, in fact, find ourselves in a position of having to tell ourselves some things of possible truth, and I think, significance. Let me play an anthropological game now: anthropology is in the business of perspective, as you know. There has been and is such a thing in the world as a little society, and there is such a thing in the world as a big one. Men in little societies, and by that I mean very little, about a thousand or less, behave in certain ways. If you looked at the very glue of those little societies, the social control machineries going on there, you would see that machinery moving in a very characteristic fashion, irrespective of the cultural variability from each little society to the next, continent to continent. If you looked into all of these little societies in the world, the social control machineries would seem to you terribly pragmatic: the society would seem bent, in its law-like behavior, on getting some out-of-line person to stop doing whatever disruptive thing he's been doing, and when he's stopped it, and the society's show was smoothly back on the road, that'd be the end of the matter. The thinking of the people through all this would seem very inductive and very particularistic; of course, in such little societies everyone knows virtually everything about everybody, so men can get down to the particulars of that particular person, why he'd do what he did in the way he had done it, and men can usually invent something that will make him stop that, and thereby get the social show back on the road. Also, whatever it is men decide to do, to make him stop, they have to do it looking him in the eyes; it's an eye-ball to eye-ball confrontation. We call these little societies tribal, usually, or primitive. There are also big societies in the world, and we know them well since we live in one. These behave very differently; think of a law, think of its phrasing in abstract terms, think of the deductive nature of the application of law, think of due process, and think of the impersonal applications of the law. You have now in your minds a pair of models, of little societies and big ones. I chose law and law-like behavior because that rather dramatically suggests the fundamental, gut contrast, between little societies and big ones.

Those little societies work; they work pretty well. Why? Culture is, basically, above everything, a kind of cumulation of the results of trial and error. It is no surprise that those small societies work, because they have been at it awhile. Those social control machineries are shaken-down, coherent, and tend to keep things on the road pretty well. They are the cumulative results of at least 500,000 years of trial and error, of learning how to live in societies of that small scale.

We were once little. We, the species, through much more than ninety-nine percent of our total career on earth as the human species, lived in little societies. Ninety-nine percent of the experience of the human species is in societies of that kind. On the other side, one percent of our time, and less, we have had the experience of being big. Many people, thinking in these terms, say, "That's not very much time to learn how to live with bigness, is it?" I think that way; it's not very much time to learn. Some people get comfort from this, "No wonder we're flopping around, about to eliminate ourselves with bombs and pollution; we haven't had much time to learn otherwise, but it will all work out." My own personal style runs more to panic.

You were warned, by no less than Mr. Bigelow, to exercise some caution about us scholar types, because we tend to get irrelevant. Now the relevance. I am trying to help account for this phenomenon that Jules Henry laid out for us. We lived ninety-nine percent of our human career in little societies, and now we are trying to find out how to live in big societies. One thing further about little societies is that in them virtually every human action is an acting out of some stabilized role relationship; the total set of role relationships in these little societies are very complicated, and they exhaustively organize behavior, effectively. We got big. We have, I think, a tribal habit. We have a habit that's carried over, through this brief one percent of our time on earth, a habit that was quite workable in that earlier context, but which often works poorly in this new context, in big societies. We keep making up roles. We keep making categories--categories of persons; sometimes they work, sometimes not, but always we are busy generating categories of persons. For example, we have invented the category, Negro. That is a social artifact. All one has to do is ask who by social definition is in the category and who's out of it, to see its artifactual nature. We made that category up. Why did we make it up? I think, in part, because of this sort of ingrained tribal habit of ascribing people to categories, to role definition, whether those categories do social work or only create mischief. Please don't misunderstand me. I am not trying to analyze anything as complicated as race relations, but I am suggesting that we have a compulsion to make these categories and to hang onto them desperately. In anthropology we call such categories a folk taxonomy; that is to say, anthropologists go to a society and some may go to discover what the categories are in the heads of that people. Any anthropologist coming into America would have to say that "Negro" is a category in American heads. Is it ever! Folk taxonomies are intriguing; would you believe: "curriculum developer," "teacher trainer," "researcher," and "teacher"--another folk taxonomy, to be sure bizarre, but real enough in some segment in this society.

One of the symptoms of this tribal habit of generating folk taxonomies is the systematic distortions in the text books Jules Henry talked about. For the distortion is systematic, not random; among other things, minds which so distort are necessarily guided by socially generated, artifactual folk categories as black-white, rich-poor, employer-employee, friend-enemy, etc. Such minds are locked-in by the thought-shaping power of the folk categories--that and by certain invidious hang-ups about the categories.

We carry over that tribal habit, the generating of categories of persons; in small societies the categories work, in our big society often not. There's another tribal habit that we carry over, in a very distorted way. Small societies are homogeneous, in literal fact; particularly they are homogeneous in mind. They have a culture. Come in your minds into the big societies, now. A fundamental fact about a big society, each of them and ours dramatically, is the moving about of people and the enormous heterogeneity which results from that. Yet, perhaps out of tribal habit in part, we seem compelled to deny heterogeneity. It is a compulsive denial; we have to pretend heterogeneity isn't there.

I've had one fantasy often--to encounter a man from Mars, miraculously able to speak English and miraculously able to look at a social scene in somewhat the way I would. In this fantasy, I would ask him, "I want you to take a year, now, and look around. Come back and tell me what you see. Only one thing, one rule, don't look inside any of those places that are named School." In a year he would come back and tell me what he saw. Obviously, among the two or three things he would tell me first, "Where'd you get all those types? What heterogeneity in this society!" And then I would set him up. I'd say, "Look, we have a problem here. You know those places you didn't look at--the schools. What we want is to so structure things so that those schools, the people in them, the books, everything about them, will be responsive only to one part of this wide heterogeneity that you talked about. We want the schools totally to reflect the norms of the suburban middle class. I want you to tell us how to do that." Of course, the man from Mars, being wise, would say, "You can't do it. It simply can't be done." And of course, it has been done. That's the mystery.

We have somehow done just that--built a school system which is virtually unresponsive to most of the nation. One of the symptoms is the kind of systematic distortion in text book materials Jules Henry described. The schools have been responsive to the behaviors and values of this little middle class hunk of our society (note the folk category) and particularly sensitive about ideas that may be undermining that little hunk.

We seem driven; we're compulsive about homogeneity; we blind ourselves to heterogeneity out of some remote tribal impulse that says, "Don't look; those behaviors and values aren't there."

Conversation these past three days has been sprinkled, very generously, with concerns about living more effectively with heterogeneity in the schools and the society; the reason we talk here is that it's such a hard thing to do back home.

I've named two compulsions, both of which stem in some part from long tribal habit: the compelling habit of generating and hanging onto folk taxonomies, categories of persons, whether those categories do social work or only make social mischief; and the compelling habit of denying real heterogeneity, the heterogeneity of behavior, of value, of style which so marks our big and complex society. The two together are bad medicine: we make up a category "Negro," put men into it, then deny that they exist as behaving reality--"the invisible man."

Learning to live with bigness is the main unfinished work of our society--the job of learning to take a real look at unexamined folk taxonomies and to assess them by standards of humane social utility, the job of learning to take a real look at heterogeneity of behavior, value, style. We haven't even scratched the surface in the schools, and we must, especially in the schools, quickly get on with this the society's unfinished difficult business.

Finally, among all the other things that we can name that we need to finish this unfinished business, we perhaps need most the kind of research behavior best exemplified in other work of Jules Henry. We need patient, direct, classroom observation--unmediated by tests and other instruments of indirect measurement. We need a lot of it. We have to get into those classrooms, and we must look at them for hours and hours on end; we need what we anthropologists call ethnographic records of classroom and school and community. Out of such records, with other things, I think we will begin to have some surer sense, in our own minds, of what it is that drives us in the ways that we're driven.

In Jules Henry's commentary I see described, between the lines, a sort of cultural miasma that is blinding. In Haubrich's paper, of course, we see a structural system that is binding. Either, neither, both in combination: that's beyond our point at this time. We are somehow bound and somehow blinded and that needs to be understood. Particularly, it needs to be understood, in my judgment, by those persons that are on the scene where the action is, after all--in the classroom. When that happens, texts and curricula can be good or bad, of course hopefully good, but the school will in any event be in business, learning to live more effectively with bigness. "The truth will make us free," hopefully make free, if not the rest of us, at least the teachers.

Discussion

A. Herman Kranzer, Temple University, Group 2:

It's hard to limit this thing to a consideration of one problem posed by Jules Henry's speech. The most critical problem posed by Henry, the one thing we felt most strongly about, had to do with our sense that the social sciences do not reconcile the variance in their own points of view. In trying to get direction for the schools, we note that the sociologists, the anthropologists, and the geologists, and the historians can't themselves agree on what is "the truth"--what does make sense. Until such agreement can be reached, the teacher is left in the middle holding the bag.

B. Dorothy Seaburg, Northern Illinois University, Group 3:

We asked several questions:

1. At what age can a child begin to deal with controversy? In other words, what can we teach when?

2. How can one select materials? One needs multiple texts and primary sources to work with.

3. How does one educate a teacher to face what is? Teachers need to be educated to:

a. Read texts intelligently themselves and learn how to use them in the classroom.
b. Have confidence in their own professional judgment.
c. Use in their curricula "depth studies" rather than studies which "cover the waterfront."

In this context, Duckworth's idea of the importance of the "I can find out" belief plays a significant role. In order to effect change, people have to learn to live with insecurity; too many people are unable or unwilling to live with what they cannot surely control.

C. Miriam Wilt, Temple University, Group 1:

I'm going to look at the question of the academic training of teachers. Our group endeavored to address itself to a problem in this area which it could not solve. The problem has to be solved before much meaningful innovation in education can be done. Do we keep adding courses? Do we keep trying to make it possible for them to use all that is available without necessarily knowing the details of every subject? Until we know whether teachers-in-training need to master more content or less, we are going to have a difficult time finding a direction to give elementary teachers-in-training as they work in the so-called academic departments.

D. William Ward, Northwest Regional Educational Laboratory, Group 10:

We asked, first, whether or not some of the quotations cited by Jules Henry were taken out of context. Do they really represent "the world of reality" in the social studies? That's a question.

Our group, secondly, focused quite heavily on the problem that teachers have in bringing children to understand complex generalizations.

Trying to bring children to the level where they can understand complex generalizations: the most comprehensive work that has been done on this subject is that done by Hanna at Stanford. He identified some thirty-two hundred different concepts that he and his group felt to be important in the social sciences; Jim Hills, who is present here, also did a study to find out what the specialists in the social sciences felt to be the most relevant of those several hundred principles so that teachers might have some idea as to what social scientists felt to be the really critical things that the schools ought to be attending to. Hilda Taba's work is, in my estimation, the most sophisticated kind of work that has been done to help teachers understand the strategies and procedures that teachers can use to take kids from the level of "messing around" with the raw data, to the level of developing an understanding of high-level abstract generalizations; very few teacher preparation institutions in the United States or very few in-service programs are involving teachers in learning Taba's kind of system. Even a complex system takes 30 years to develop (that is how long Hilda Taba worked on her system). You cannot all of a sudden have a group of teachers sit down some Friday afternoon after school and teach them her system and expect them to go back into their classrooms and teach differently. The same thing is true with the people in the colleges of teacher education and the departments of education in the universities. Our speaker last night, Vernon Haubrich, spoke of his trying to pump into the nervous systems of people a complex set of new perceptions, attitudes, and ways of going about their jobs during the summer time, and his expecting this work to have an effect. He didn't get the job done.

We won't get Taba's job or the job of the new social sciences done right in a moment. But we do have some kinds of experiments going on in the United States, we do have some kinds of explorations going on, and these to relate in a meaningful way to the kinds of problems that Dr. Henry was talking about.

E. Nancy Modiano, New York University, Group 6:

Last night we talked about some of the complexities which interfere with our effort to change things. And today we took the problem posed in this morning's talk as a kind of case study for us as to how change might take place and what might prevent its taking place. We started out very nicely and politely talking about the textbooks. Not only are there errors of omission in the texts (as Dr. Henry charged); there are also very serious errors of commission. In the face of so much misrepresentation, what we finally asked was, "Are we really willing to face the realities of change? Do we really want children to see the world as it is? Do we really want them to perceive the discrepancies between the rhetoric of many of our social studies programs and the realities of our history? Do we really want them to see the disparity between what we say we are and our present posture both in foreign and domestic policies?" One could add other examples of the difference between what our culture represents itself as being and what it is.

F. Eleanor McMahon, Rhode Island College, Group 11:

We were optimistic about the possibility of finding solutions to the problems which Mr. Henry posed. We are today using many more texts and supplementary books in our high school classes, in our elementary classes, and in colleges as well. Our teachers are finding ways of breaking through some of the problems that were mentioned earlier. And many of us are using original source materials and source books with children. Our group felt that Dr. Henry had painted the picture of what the school texts say to children in a somewhat unrelieved black. There are some hopeful signs on the horizon, particularly the Taba work, the ESI materials being developed and so forth. And we felt that we are now, in social science, probably at about the same stage that we were in mathematics five to seven years ago.

As part of looking for ways of encouraging greater honesty in the handling of the social sciences, some of us called for a heavier involvement on the part of teachers in social problems themselves. Back in Rhode Island I'm considered a liberal (which I suppose puts me slightly to the right of Governor Reagan everywhere else). But

I did have the feeling in the group that it was all right to present conclusions if they were liberal conclusions. If you wished to put forward conservative conclusions, you had better stick with matters of "process."

G. Dorothy Haupt, Merrill-Palmer Institute, Group 9:

I'm going to be compulsive and address a question to Dr. Henry, if I may? I would like for him to comment on what kinds of changes he sees as necessary to teacher education if it is to do something about the "education for stupidity" he described.

Jules Henry: I don't think that the training of teachers should be any different from the training of human beings, the training offered any sort of person who has an interest in knowledge and in developing himself. There's nothing that can be done in a School of Education to make a person interested in enlightenment, interested in the affairs around him, if he hasn't gotten that interest by the time he gets there. I shall add--since this silence is very oppressive--that one of the most important things that any teacher can do is to read good newspapers. I live in Missouri, but I subscribe to the New York Times, and I read it carefully from cover to cover every evening. There are many books available which would give the kind of enlightenment I do not find in the textbooks. As I said, what it takes to teach good social science is courage more than brains. And I don't see how we can give anybody courage if he hasn't got it.

H. Robert Davis, Syracuse University, Group 7:

I only have one proposition. The proposition is this: that we have allowed our schools to become far too dependent upon textbooks. Professor Henry understates the case. My personal study has been in mathematics. You might think of mathematics as a clear-cut, simple case; but even in mathematics the textbooks are simply ruining the school programs. I could document the harm that the texts are doing in math in the same way that Jules Henry could with the textbook treatment of the issue of the placing of American troops on Soviet soil after the Russian revolution.

Jules Henry: I'd like to add one thing with respect to courage. The essential issue in this country is that people are stronger than they think. One often wonders what people are afraid of. I'm not a teacher in an elementary or a secondary school, so I don't know much about the kinds of fears from which they suffer, but I know something about the fears from which academic people in the universities and colleges suffer, and I wonder what they are. I have published things in this country which could never have been published in the Soviet Union or in Poland or in most any one of the Russian satellite countries. This is a country which, in spite of its immense defects, defects which are carrying us toward the edge of catastrophe, is amazingly tolerant of dissidence. And I don't think many people understand that. So that I would say that as far as courage is concerned, we should really know where this country stands when it comes to the ability to verbalize dissent. And it stands, I would think, among one of the foremost countries of the world as far as that's concerned.

Robert Davis:

I think I'm going to buy that as the middle piece of what I was going to say. What our group was talking about was that our country does allow the creative use of dissent, and it's up to us to make that kind of use of it. I think it's about time somebody told Ralph Nader that he ought to work over the textbook publishers. One thing you (Mr. Henry) did not point out is the fact that the "author's names" on textbooks are not the names of the people who wrote the textbooks. It seems to me there's a certain amount of fraud there that might be investigated. But there's a great deal to this. J. J. Schwab and many others have studied textbooks from the point of view of their rhetoric, pointing out that they're stated in a rhetoric of simple declarative sentences, a rhetoric of conclusions. The truth somehow eludes such a rhetoric. A rhetoric of inquiry is regarded by most publishers as an economic liability.

I don't propose to pursue that idea, but let me finish up by saying that, if we have allowed our schools to become far too dependent upon textbooks, there are alternatives. Newspapers for some areas are an alternative, and many people report other things that can be done to get around texts--including, incidentally, letting children take the textbook home because "the parents want to see it," while never making an assignment in it. One interesting thing that has been done to replace texts in history has been to have some fourth graders write a history. The history could be the history of their family, the history of their church, the history of their town, or the history of their school. There are many activities like this from which people will learn a great deal more than they will from any of the textbooks with which I am acquainted.

Publishers are not the bad guys. Some friends of mine in the publishing business have harmed their careers a great deal by attempting to bring out better books. If you don't know Black's book on the subject of the American school book, you might want to read it someday. One of the things that Lyle Spencer says is that publishers are not so much worried about investing in bad ideas as investing in good ideas that the world isn't ready for; they cannot take the lead.

Virginia Jones: I would like to see us talk about the role of the college professor in securing honesty. Each of us who has the day-to-day responsibility for confronting future teachers probably needs some "readjusting."

Ted Kaltsounis: I have a suggestion. Bad textbooks have been written. Those who write them should be the experts. But even "the experts" may not be courageous enough to break away from the traditional methods of getting their promotions and raises in pay so that they can deal with such important things as writing a good honest textbook.

Jules Henry: Some of the books which I cited this morning have been written by experts. And I would say these experts need not be afraid. The American university is remarkably tolerant of way-out opinions; the books have been written, many of them, by professors at Princeton, Chicago, Stanford. They may be more afraid than they think they have to be.

I. Judy Craighead, New Orleans, Group 9:

One group member stated that he was not satisfied with the direction (if one existed) in which our discussion was going. He believed that our main objective was to discuss what we can do about textbooks. Ignoring the question of whose "fault" it is that we allow misinformation and the deletion of pertinent facts to exist in current textbooks, he went straight to the question of the purposes of our meeting--what can we do? And from this beautifully formulated discussion proposal emerged a potpourri of fuzzy thinking. There was some agreement that available textbooks should be used as an outline from which we might structure more "student-involved" units. At the same time, we felt that, in order to prevent kids from absorbing misinformation, we ought to give them other sources which we would deem reliable and factual. One of these might be the student's "life experiences." Get the kids involved in their own learning; help them to see that what they are studying is not completely incongruous, given the events in their daily lives. Their reality is not the world of the classroom; they enter their world when the bell rings and they step out into the hall. We, as teachers and trainers of teachers, are going to find out that we must enter their world before we can ask them to relate to ours.

As to the conference as a whole--by listening, observing, sharing thoughts, and discussing my ideas with the other participants, I formulated and reformulated numerous ideas having to do with education. The most significant of these appeared to me to be that we must give up the "informational approach" to education and turn to a "human approach." It is not necessary for us to teach the "child" instead of the subject; we can structure a learning environment in which the child can learn to teach himself. The self-teaching situation requires that motivation be supplied by the learner. As teachers, we must be the student's ally and serve as a dynamic link between him and the knowledge he seeks. Our *Zeitgeistman*, Marshal McLuhan, makes this observation concerning the educator's role: "Today's child is growing up absurd, because he lives in two different worlds, and neither of them inclines him to grow up. Growing up--that is our new work, and it is *total*."

New Directions in Elementary Education

Arthur Singer
President, Education Development Center

The subject that has been assigned to me suggests that I am to gaze into the future and report to you just what I find there. I am tempted to accept the invitation at its face value and to devote the next few minutes to sharing with you what I see in my crystal ball, comfortable in the realization that I shall be able to remind you in later years of every aspect in which my prognostications were correct, and to depend upon you to forget -- or at least forgive -- my misreadings. But for the most part I intend to rise above that temptation. What I plan to do instead is to look backward a little into the past and then to look hard at the present, on the assumption that a clear view of both will enable us to look a little ahead.

I propose, that is, to examine with you certain aspects of the work done in what has come to be called the curriculum reform movement during the last fifteen years or so; then relate that to the kind of education that preceded this unique developmental work and the kind that followed it; and then talk a little about what I see, or what I would like to see, in elementary education in the future. The shape of the future is, of course, our main concern, but because the future is conditioned by both the past and the present, we need to look at where we are and how we got there before we look at where we might be able to go.

The past dozen years have seen sweeping changes in the American educational system. One of them is the entry of the federal government into the business of pre-college education -- an entry that was made with both feet and that has taken on more and more significance with each passing year. A second great change has been the curriculum reform movement which began some ten or fifteen years ago in the secondary school and has since spread downwards and upwards until it encompasses the entire range of formal education. These are not the only major changes that have taken place -- the concentration over the past few years upon the education of the underprivileged is surely another change of major importance -- but for my purposes today they are the two changes upon which I intend to dwell.

Those two changes represent matters with which I am familiar if only because the organization with which I am associated was in the forefront of both. Education Development Center is the direct descendant of the Physical Science Study Committee, which initiated in 1956 the first large-scale curriculum reform program and through which the National Science Foundation -- before sputnik, before the National Defense Education Act -- began to infuse federal funds into the business of developing curriculum materials. Those funds, about a million and a half a year, seemed large in those days, before education got into the habit of going to Washington to talk in billions.

I am not sure that it was clear in 1956 and 1957 even to the Physical Science Study Committee -- PSSC -- just how significant the enterprise they had generated would turn out to be. But I think it is of interest to look back and recollect what it was that motivated an eminent group of scientists and scholars to plunge into the business of high school education.

They were, of course, men who had a single important association with secondary school physics education: they taught large numbers of students every year who came to them fresh from the high schools. They were dissatisfied with those students, whether the students intended to make careers in science or were obliged in college to take general education or distribution courses in physics. That dissatisfaction led them to look more closely at science education in the secondary school. (Such a search was already in progress under the auspices of the American Association of Physics Teachers when PSSC began to take shape.)

They discovered, first, that simply from the point of view of substance the courses being offered in secondary schools were indefensible. To begin with, the science itself was often simply wrong. Textbooks and courses had taken shape and frozen into rigidity a generation back or more, and everything that had been learned since then in physics -- the fastest moving of the sciences -- was either ignored or patched in.

It would have taken no great effort to have adjusted that. But the second shortcoming was far more serious. Physics, and indeed all science, is a process of continuous inquiry. At its heart is the identification of questions to which the answers are not quite satisfactory. From that identification a statement of clear problems is formulated upon which an attack is possible. But in the secondary school, physics was far too often being taught as a body of answers. There was, moreover, too little attention to the role played in science by problems; the student was assured that all the problems had been solved.

It was those two shortcomings that PSSC set out to attack. Intellectually, the attack was made from a pragmatic point of view. By that I mean primarily that it was not dictated closely by a reasoned theory of education. PSSC was not guided by one or another of the recognized cognitive theories or by new hypotheses regarding the process of teaching or learning. In a sense, it was an attack by physicists upon specific problems whose central components were physics itself and the practice of science. Simply because those problems themselves were clearly identifiable and at once open to head-on attack, there was no need to look further for some theoretical base, real or fancied. It was enough just to get on with the job, for the job was plainly in view. PSSC was neither assisted nor hampered by theories of education, particular or general, though the teachers and scientists involved were obviously guided by a vast amount of collective, practical experience in the teaching and learning of science.

As I said, Education Development Center and many other institutions now engaged in educational research and development are direct descendants of PSSC and we carry the genes of our forebears. With the exception of Jerome Bruner and perhaps one or two others, we have never learned to be educational theorists and for the most part we have no great urge to do so. We are not engaged in the study of education but in the practice of education. Our task is not the more profound comprehension of the educational process, but invention and innovation within the educational process, to make of it something different and something better. And this pragmatic attitude, which is quite distinct from the attitude of the colleges and the graduate schools of education, marks the alteration that has taken place over the last decade in educational research and development.

Now, I realize how much I smuggled into this argument when I used the phrase "making education better." Obviously, there must be some kinds of criteria to distinguish what is better from what is worse, and those criteria are the business of both pragmatists and theorists. I am saying only that the business of educational theory-making is a somewhat different business from that of educational innovation, and it has been the innovation rather than the theory-making that has characterized the last ten or twelve years of our educational development. I suspect, too, that it will be innovation and not theory-making that will mark the next ten or twelve, for better or for worse.

This may sound strange to those who have associated a great deal of educational theory with the curriculum reform movement. There is, for example, the much-discussed "discovery method," which is sometimes attributed to PSSC and sometimes to the "new math," and only rarely to Socrates, who seems to have fathered it. And the discovery method is indeed something which emerged, in its modern form, from the work of the curriculum reform movement. But it did not emerge within the movement. No one associated with PSSC, in his most optimistic moments, believed that a means could be found through which an eager sixteen-year-old, out of the power of his own intellect, would rediscover for himself the law of universal gravitation. It was not easy for Newton, and it has not become any easier with the passage of time.

What PSSC did believe was that it was possible to convey to that eager sixteen-year-old some notion of the atmosphere in which the discovery of the law of universal gravitation took place, and some notion of the process by means of which Newton struggled toward the discovery. I am now only repeating in somewhat different fashion what I said earlier: that PSSC set out to present physics as a body of questions and a method of attack upon real problems. It was out of this that theorists created the concept of the "discovery method." What I want to stress here is that what PSSC did and what EDC continues to do today is not guided by that or any other systematic theoretical concept: it is far more closely an engineering process in which an attempt is made to provide the existing educational system with new courses and materials. The curriculum reform movement seeks insights from theory wherever those insights seem relevant, but it is not itself a theory of education nor is it wedded to any systematic theory of education.

Having said all that, however, let me go on to say that the movement has developed during its brief lifetime a kind of general conceptual basis. During the first years of universal education in the United States, the school system itself was a teacher-centered system, in which the primary emphasis was on the substance of the subject matters involved. The classroom was organized around the teacher and on behalf of the teacher, who held the center of the stage and expounded reading and writing and arithmetic and whatever else needed teaching.

During the first half of this century, a revulsion against that system generated the child-centered classroom, with great emphasis on the well-being of the child and on something called "adjustment." The teacher in a sense became servant rather than master in the classroom, which was organized, to the largest extent consonant with reasonable order, around the child.

What the curriculum reform movement appears to be creating now is a new combination of old elements. It has retained the notion of the student-centered classroom, in which the teacher is still to be an authoritative, though not authoritarian, guide. He is still expected to speak with thorough knowledge but not _ex cathedra_.

While not rejecting the progressives' insistence on the primacy of the student, the curriculum reform movement has returned to the primacy of substance; and the student is expected to adjust to the requirements of education and not have those requirements bent or abolished to serve his own psychological needs. I think that in this recombination of old elements lies the most significant change of the past decade in American education. That change has many consequences, to which I will come presently. There remains something more to be said about the relationship between theory and practice in education.

As I have already stated, the educational reformer has need for the insights of the theoretician. But the theoretician has even greater need of the educational reformer. The theoretician is engaged in the formulation of general statements, but the road from one general statement to the next must always pass, in this real world, through the particular situation. If the question under scrutiny is that of formal education, it is only in the classroom that the old general statement can be examined and the new one formulated.

The fruitfulness of such a process depends upon the mutability of the classroom itself. The reason is straightforward enough: if educational theory proposes the discovery method as an organizing principle, it is necessary to have classrooms that do not employ the discovery method if one wishes to submit the theory itself to examination. It is necessary to go outside the framework of a theory to test the theory. Educational innovation, by its very nature, is likely to be the seedbed of new theory. Unless there is that innovation, the study of the classroom becomes a barren enterprise.

To get back to the subject at hand, after what must seem to some of you to have been a monumental digression, I believe that the theories of teaching and of learning will thrive in the coming decade, but I believe they will do so because the practice of educational reform will become more widespread, more pervasive, and more thoughtfully conducted. I believe that the future shape of elementary education will be determined primarily by how much the curriculum reform movement is able to accomplish over the next few years, and this in turn will depend upon a continuing degree of farsightedness within the federal government, from which the necessary funds must come.

Can we be more specific, then, about what remains to be accomplished? Let me try.

It is clear that great advances have been made in some of the sciences and in mathematics, in foreign languages, and upon the fringes of a few other subjects. Initially those advances were made in the secondary school, but it was evident almost from the outset that reform at the end of a process was not enough; inevitably each of the large-scale curriculum reform efforts has found itself engaged at the elementary school level.

The most critical limitation of the curriculum reform movement so far has been its use of leading school systems for developmental purposes and the resulting concentration on the middle-class, college-bound student population. The movement can so far claim no successes among the underprivileged, nor among those students whose special outlooks or whose special talents will not see them through higher academic education.

I think it is quite clear why the curriculum reform movement has been limited in this fashion. Formal education, however earnestly people may seek to impose on it the sole responsibility for the education of the young, is in fact only a superstructure erected upon the broad foundation of informal education. Although this fact is no doubt obvious enough, even thoughtful people often ignore or lose sight of it. All that the young boy and girl, the young man and woman, learn from their family, from adults with whom they come in casual contact, from their general environment and perhaps above all from the young people of their own generation with whom most of their time is spent and to whom most of their attention is given -- all this is the real foundation of their education.

Permit me a moment of oversimplification in order to make a point. Formal education, itself organized and operated by middle-class men and women of academic leanings, has for generations assumed that each student brings to the classroom a middle-class, college-oriented substructure of informal education upon which to build. Although many if not most students have in fact lacked this background in the past, their deficiencies were not of great significance; for society was more or less indifferent to the fate of students who did not match the demands of formal education and who dropped out, in one way or another. For a variety of reasons, society is no longer indifferent. But we have not yet learned just how to build a formal educational structure on foundations that are not highly verbal, more or less academically motivated, and impregnated with middle-class aspirations.

Life-adjustment education in its various forms has been utterly incapacitated in dealing with the problem and has fortunately fallen into disrepute. Vocational education in its various forms has not been notably successful. And at the moment the curriculum reform movement is doing little more than searching for a way into this enormous unsolved problem; a problem, I might add, that now confronts all the advanced nations of the world as they try to universalize upper secondary education. Perhaps more effort is going into this kind of educational development right now than into any other, and with the least success.

Nor have the problems associated with the preparation of teachers been fairly met. The trouble is that we need an entirely new kind of teacher, and we really do not know how to go about getting them. Let me again caricature the situation for the sake of making my point. We have had, in the past, two kinds of teacher. One of them said, in effect, "It is the child's business to know, and if he doesn't know, I shall tell him." The other kind said, in effect, "It is the child's business to know, and when he is ready he will know; meanwhile let us see that he is contented and on good terms with the world."

But what we require is a far more sophisticated attitude, in which the teacher may say, in effect, "It is the child's business to distinguish between a good question and a bad question, and between a good answer and a bad answer. I may be able to tell him which is which, but that will not serve, for what he needs to know is the manner in which the distinction is made. So all I am here for is to help him find his way."

What we are up against, to begin with, is that such an attitude has not been represented well enough in the education of the teachers themselves. For the most part, teachers and the people who train them give lip-service to the pedagogical ideas inherent in the curriculum reform movement and go about their business in the time-honored way. Let me adduce as anecdotal evidence a mathematics textbook which was revised to reflect "the discovery method." The revision consisted of turning a sentence which read "2 + 2 = 4" into a sentence which read "Does 2 + 2 = 4?" We have not yet learned how to tie together the reform of the school curriculum with the reform of teacher education, and I am inclined to believe that it will take a great deal more effort than we have so far been willing to invest.

But it may also be that there are more profound reasons for our difficulties with teachers. Let me use physics as an example. Within the customary physics class, whether it was a classical or a progressive classroom, the teacher was secure in his position as the sole person in the class in whom thorough knowledge of the subject was vested: a person of eminence, toward whom all eyes periodically turned. But we are now, while more than ever concerned with the teacher's mastery of substance, asking that teacher to modify his attitude in a subtle but important way. We are trying to lessen the significance of knowing the answer, in favor of the attack upon the problem. To some extent the teacher remains the point of authority within the classroom, but we have insidiously attacked the very notion of authority. Now all of this is not calculated to appeal to the ego of the man or woman upon whom we depend. It may be that we are asking more of our teachers than they are willing to give -- at least until they have learned over time the greater satisfactions of the new role in which they have been cast.

Neither have we been wholly successful in dealing with the general inertia of the educational system.

One aspect of this inertia appears in testing procedures. For the most part, today's tests rely upon the student's ability to give answers -- which of course is an important ability -- but ignore his ability to propound questions or to solve problems. Again I repeat that the distinction is an important one, for we need to lose some of our respect for the student who can answer a given question but who cannot ask significant questions in relation to a great variety of environmental cues and equally who cannot develop the ability to judge the possible responses.

I may appear to be stressing our failures. Let me speak now of something I can neither claim as a success nor regret as a failure -- but merely report with a sense of satisfaction. Underlying PSSC and indeed all the curriculum reform programs has been a faith in the young people whom we proposed to affect. There has always been something patronizing in an educational outlook which calls upon students to accept on faith the answers which are doled out to them by the system, and something even more patronizing in the concepts of "readiness" and of "overachieving" and "underachieving." Our own faith was that the capacity of the young to learn was in effect unbounded, and that a good part of the limitations that we identified with the student was in fact the result of our own inability to organize an educational system that came up to snuff. We resist the attitude of sculptors who find it comfortable to blame the quality of the marble for their own botched jobs.

All the evidence that comes from outside the formal educational system supports our faith in the student's capacity. Time and again, students upon whom special attention has been lavished, or in whose environment there existed special stimuli toward accomplishment, have demonstrated that they are always ready to master what is presented to them in sensible and sensitive form, or with particular care. The notion of reading readiness becomes highly suspect when Omar Khayyam Moore is able to demonstrate repeatedly that under the proper circumstances reading comes quite naturally to three-year-olds.

None of this should come as any surprise. Every child, after all, has gone a long way toward mastering his native language (and incidentally any other language to which he is much exposed) by the age of four or five, and there probably is nothing he is called upon to learn through his life that is as difficult, as abstruse and as profound as his mastery of language. But we have consistently preferred to ignore this fact, and comparable facts that can be amassed by anyone who examines the achievements among the young in his own neighborhood, usually when parents have gone out of their way to stimulate their own children.

Interaction with any environment leads to learning, because learning is the natural style of children. But the variables which affect the nature of learning and of what is learned are not simple. There are case histories which show the damage that can be done to a child's personality by force feeding its cerebellum. The point I am trying to make, however, is that the capacity to learn is there, and we are obliged to utilize it properly, not to pretend that it does not exist.

It has been demonstrated repeatedly over the past decade that the ability of students to learn is deeper than many educators have supposed. The mathematicians do not seem to have found a mathematical concept that cannot be introduced and mastered, in some form or another, during the first years of schooling. The theorists maintain that children are incapable of forming certain concepts until a certain stage in their development, and adduce as evidence experiments they have conducted with children. But in fact they are saying only that within the environment in which those children are growing, certain limitations are imposed on their ability to learn. If that environment is properly enriched, however, either in school or out of it, the limitations which theorists conceive to be natural turn out to be merely reflections of the student's cultural surroundings, which change when the surroundings change. This much we have learned in a decade of curriculum development, if we have learned nothing else.

And now at last I turn to the future, for it is this last element which must guide us. If the lessons of the past decade are of any value, and if we can mange to make them serve us as we design the formal educational system over the next decade, elementary education may undergo major alterations.

First, enormous efforts will be made to reorganize the substance of education around the principles of problem and of task. The child will be encouraged to learn science by being obliged to undertake tasks or problems which have been made congenial to him and to his own interest and which challenge his latent ability. In science and mathematics, reorganization along these lines is well advanced, and in English it is reasonable to expect that solutions will be found. In social studies and other disciplines which rely heavily on the development of verbal skills it may turn out to be extremely difficult; it may, in fact, in some cases be impossible, though I do not believe it will. For students with impoverished social backgrounds, time in the elementary school will be spent in learning the language and in learning those subjects which require minimal intermediation through language -- science, mathematics, music, art, and geography. But of course none of us yet know enough to make sharp statements, and it may be that such subjects as history, too, can be taught by means of problems and tasks.

Implicit in such an approach is the fact, to which I have already referred, that the problem and the task must be in some way congenial to the student. This means in effect that every teacher in every classroom must have at his command an enormous number of problems and tasks, carefully prepared and fully comprehended by the teacher himself, so that he may have some confidence that from week to week --

and for the total system from year to year -- he will be able to match each student with an appropriate assignment. In other words, there must be preparation of learning materials upon an enormous scale and in enormous breadth, and these materials must be immediately available and at all levels within the elementary school.

It is at this point, I believe, that technology may turn out -- as up to now it has certainly not turned out -- to have some real and special value for education. The business of matching task with student is exactly the sort of thing that the computer does well. And on the scale at which I believe such matching will be necessary, it is at least probable that the computer will turn out to be indispensable. A second-grader, for example, having completed a four-day task in biology, must go on to a new and related task if his education is to possess structure; a class of second-graders may well consist of twenty-five or thirty or forty students, each of them at a different stage of completion of a different task, and each destined to proceed upon completion to still other tasks. This is just the kind of thing the computer does easily and well, where the human being would be lost in a maze of complications.

In what I have already said, the role of the teacher becomes clear in the elementary school of the future: She -- I suppose I should say "she" -- will be guide and assistant to each of the children, helping them with their tasks as they come to her for help or as she observes they are floundering beyond their capacity to rescue themselves. The classroom will become something far more like a workshop than a lecture room. Each child will be engaged in a task, seeking to perform it out of his own resources and those of the other children, aided from time to time by the teacher. And if you can forget for the moment the limiting definition of education as something that takes place inside a classroom and think of education in its more general sense, I think you will realize that that is exactly the way that not only children but every one of us learns many of the things we value and we retain.

I have said that the problems and the tasks must be congenial. I mean by that really nothing more than that they must have some intrinsic significance for the student himself. It may be that just here lies the significance of such an educational system for the underprivileged. For the problem of the first generation urban Negro child is precisely that the middle-class school system that is imposed upon him may seem at first glance to contain little of real significance to him. If I have stated correctly the obligation of the educator to the elementary school system of the future, it will include the obligation to provide for those children, too, tasks and problems that they will find congenial and hence significant. Please recognize that I do not propose a series of discrete tasks, but a structure of tasks and problems, so that the nature of the congeniality will alter as the child proceeds until he is finding congenial just those tasks whose mastery is important to him.

Should all this be done? I believe it should, not because the wisdom of it is incontrovertible but because all of our experience in curriculum reform seems to me to make it the most promising next step in elementary education. Will it be done? There my crystal ball fails me. I know that it will require a greater investment of effort and of money than we have ever been willing to put into the educational system. Make no mistake about what I am proposing. It might require, for a first-grade class in general science, the preparation of a thousand different problems and tasks, each expected to occupy a student for a week for two, and each provided with materials out of the real world upon which the child is to operate -- all this is so that twenty or thirty children may be matched at any moment with a problem or a task appropriate for them.

If it does happen, I believe it will happen because pressures from outside the direct area of education make it inescapable. One of these, which we are already experiencing, is the pressure from the urban poor for an education more relevant to their own needs -- an education that cannot be provided in the present pattern.

But I suspect that the real pressure will be indirect. It will come from teachers, but not in their capacity as teachers. It will be as public employees that they will make such changes inevitable. In the last two years, teachers have begun to make it clear that they are no longer content to be underpaid and overworked. While education remains organized in a fashion that makes the teachers' salaries the major item of expense, the pressure of rising salaries on the cost of education will continue to mount. In time that pressure will make it essential to transfer some of the cost of education to the preparation of learning materials, and in that fashion to make the teacher more productive and more efficient.

I do not suggest that education, with the passage of time, is going to become cheaper -- rather, it will become progressively more expensive. I suggest only that what I have outlined here is a more efficient educational system, and as such may impose itself upon us. It happens also that I believe it will be a better educational system, although we are all aware that efficiency and quality do not necessarily go hand in hand.

That, in any case, is the future of elementary education as I see it. It may not be accurate; it may not even be clear. What is clear is that those of us involved in educational research and development must ourselves recognize and accept the lessons offered us by our own experience of the last decade. "Lessons," as Cesare Pavese once remarked, "are not given -- they are taken." If we are willing to take these lessons, I think they will guide us in trying to transform the elementary school into a much different and better place for all students than it now is.

A Portmanteau Proposal

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Many intractable problems face our schools; of these, five appear to me to go together. If they are handled together, they may well allow us to create a single set of solutions for all of them.[1] These problems are:

1. The problem of recruiting college students to the profession of teaching in the schools;

2. The problem of preparing school systems to retain their new recruits;

3. The problem of finding ways through which the colleges (especially the community colleges, junior colleges, colleges for teachers, and four-year colleges without graduate schools) can handle the "special" disciplines, particularly the natural sciences and mathematics--ways appropriate to the best of new subject matter and the best of new methods;

4. The problem of using the new technologies (The new technologies, especially those that began to emerge after the 1920's, have not yet been studied or exploited efficiently. Not enough attention has been given to the goals implicit in using them, the subject matter to which they are appropriate, or to the methodology according to which they ought to be used to make them work effectively in schools and colleges. By the "technologies", I mean films, television, computerized teaching devices and teaching aids, and ordinary teaching machines);

5. The problem of avoiding a terminal conception of vocational training (We must learn how to use subjects in such a way as to make them appealing and useful to the person who decides to seek remunerative employment rather than college study;

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[1] Ideas expressed in this paper will appear in a book which Dr. Zacharias is writing. This paper should not be quoted or reproduced without the permission of the author.

at the same time, we must create for him a vocational education which permits him to find a college education which will be appealing and useful to him should he, at some point, choose college).

I believe that, if we tackle all of these problems at once, we can learn how to handle them all in ways which can be proliferated to involve the numbers of new teachers that the country needs each year; we should not accept anything short of a hundred thousand high-quality young men and women per year as the goal of our program. In order to do this, we must keep together, in some way, several simultaneous streams of activity.

We can expect success in the enterprise of solving all five problems if learning aids--"topics"--in great variety are carefully developed. The topics must be ones which school children as well as college students can manage; they must be interesting as well as useful to the whole spectrum of students--some of whom are verbally skillful, some of whom are skillful with symbols, some of whom are skillful with soldering irons, some with people. A "topic", as I define it, must have "bite." We must use our technological strength and our educational insight to make the bite a sharp one. Therefore, topics and their "learning aids" must run from school age through college age. We propose to start studying these topics by studying phenomena, not by studying theory. We would plan to study events which happen--which can be seen, and "manipulated" in the primary sense of that word--"to treat, work or operate with the hands." Some of these topics can start easily with ten-year-olds; the topics will gradually become more sophisticated, but sophisticated in ways which are appropriate to the style of sophistication which the student enjoys at each age level.

Problem I: The Recruitment and Preparation of Professionals

For the past several years I have been very much involved in the professional education of scientists, engineers, physicians, and teachers. In conferences, meetings, panel discussions, both in my long-term and in my short-term involvements, I have become intensely aware of the problems in educating professionals, of the need for a national improvement in the way in which we educate the professional. Equally important, but less close to home for me, is the problem of educating non-professionals--skilled technicians, nurses' aids, dental assistants, mechanics, and so on. One may be tempted to think that these professions and vocations are vastly different from one another. To be sure, as to specific skills required and subject matter presumed, they frequently are. But no matter how, when, or for how long I study their problems, I inevitably arrive at the same general conclusions for all of the professions and vocations.

First of all, I believe that professional and nonprofessional education begins in early childhood. I believe that a child might well start to become a physicist with, for example, a Meccano set, a radio, or a Model T Ford. An engineer might start with a radio, a Model T Ford, or a Meccano set, and so might the skilled mechanic. A biologist might start with a frog, and so might a nurse. Generally our highly motivated young people receive roughly similar general educations in the elementary and the secondary schools. But when they reach college they believe that they will begin to move closer to their professions. What our colleges generally do, however, is to put these students through a series of courses which are designed to improve their ability to do something, but which do not come close to the actual work or profession which they wish to pursue.

This process which we employ to train the professional is analogous to beginning a detective story not with the crime, but with a long discussion of the nature of legal systems. Consider a detective story which told first how the law came down from the Romans, through the Germans, through the British Common Law, how it finally came to the form that it now takes in the United States. Such a story might have side paragraphs or chapters--laboratory exercises on the Bertillon system of fingerprinting and on various other scholarly approaches to the detection of criminals. In order to be ultra-modern, it would certainly contain an exercise on the use of computers in collating criminology-data. In addition, it would include a pro-and-con discussion of felony-proneness tests. After all of this, the last chapter would contain a statement that a murder was in fact committed. The reader would be given a short precis of how the various mechanisms were used to effect detection of the murder. Then he could put away the book.

My analogy is not a joke. Its "plot" represents what, in fact, we do. And we do it in the education of scientists, engineers, physicians, and teachers.

What can we do that is different? For one thing, I would like to see us find a means of telescoping professional training from twelve years (four years of secondary school, four years of college, and four, sometimes five, years of professional school) into a maximum of six years for some, eight or ten years for others. More importantly, I would like to see us learn how to start engaging the attention of the student on the subject about which he has already evinced some interest. Western Reserve Medical School has a system which bears on this particular point. Every entering medical student is assigned to a case--a family in which the wife is already pregnant. He follows the case for at least two years. He follows the expectant mother to the obstetrician, to the hospital, through postnatal care, and so on. At the same time, he is assigned to a group of eight or nine students and a discussion leader. The group discusses the cases which the students have been following. When the students meet with difficulties in any case, difficulties in which the particular physician-discussion leader is not an expert, appropriate physicians are called in. Frequently students meet in groups larger than nine; here they can have intergroup comparisons and exchanges. In any event, the freshman medical student at Western Reserve is, through this process, learning early what it means to be a doctor and learning why he should know something about blood chemistry, microbiology, and neurophysiology. Contrast this kind of operation with the kind of operation in which students are regimented in groups of four and carving a cadaver which bears only a slight resemblance to an intact, live human being.

Let me give another example: physics students arriving at M.I.T. are allowed to choose a project laboratory in their freshman year. There they start work on either an experimental or a theoretical topic which they can just barely manage. But the topic forces them to face the need for learning a lot of subject matter which they otherwise would just "take in" because somebody said that that is what they ought to do. After discussion with advisers, the student selects one from among a number of topics that the instructor thinks he can handle. M.I.T. coeds, for instance, do not arrive with the transistorized electronic facility that the men arrive with; they start with different types of problems, problems that they can handle. In theory sessions and in sessions devoted to experiment, the program is conducted--and in biology, chemistry, and mathematics, as well as in physics.

What do these examples have to do with the preparation of teachers? Clearly, the "crime" of our detective story is the act of teaching, the "patient" is the pupil, and the "project laboratory" is the classroom. Generally, education students in colleges are given courses which are about teaching, but which are not teaching itself. Most professors in education schools are not themselves teaching children, their courses are peripheral--the philosophy, the methodology, and the psychology of education. But these professors do not ordinarily have the student start to learn about teaching by doing some teaching. At present, a prospective teacher is likely to learn "about" education in the early years of his college career; his actual teaching experience comes later. I believe that the programs in "education" and in "subjects" could be combined along the lines I have suggested to make one whole program, and that advantages would accrue to both programs from this. Not only would the student get a feel for teaching and learn the problems, possibilities, and pitfalls of the classroom, but he would also learn a great deal about his subject matter. He could not help learning more when he has to know both his own and his pupils' understanding. As a matter of fact, I would like to see both prospective teachers and prospective non-teaching professionals do some learning by teaching.

My proposal rests on several important notions: One notion is that a professional in training requires extensive and intensive interaction with at least one and possibly several faculty members for guidance--guidance as to the substance of what he learns, and as to the taste, style, and judgment of what he does. I say "at least" one; it is easy for a student to be entrapped by a faculty member who is interested in only a small part of a discipline, a faculty member who does not provide enough scope for the student to stretch his intellectual muscle. A second notion is that professional training requires a rapid transfer of responsibility and authority for learning from the faculty to the student. That is, the verb "to teach" must be erased and replaced by the verb "to learn." I would like to see all students treated as if they had their minds made up. They would then start working--with guidance, given apprenticeship arrangements, and so on--in the profession which seems most attractive to them.

I believe in an apprenticeship system. In the old days the apprentice system had great disadvantages--the apprentice had no easy mechanism for transcending the disciplinarian. But this is no longer true in the middle of the twentieth century. People, books, films, guides, programs, magazines, journals, newspapers, and so on--on and on-- allow a student to go as far as he wants to go in appealing over the head of the "master." Indeed, one of the major tasks of the curriculum reform movement has been, and is, to prepare new materials to make it increasingly easy for the apprentice to go over the master's head. But if we ask the apprentice to look beyond the "master," we must also find ways to improve the signal-to-noise ratio for him so that he does not have to browse through a tremendous amount of stuff.[2]

Obviously, a great many students in college do not know what they want to do. One has to help them find out. The way to help them is to have them make a commitment of some sort to a profession which they choose tentatively as if they were going to be in that profession permanently. But if they do not like it, then let them change and study something else. Naturally, if a student has made up his mind, he is that much farther ahead; he might just as well take advantage of it. But there is no way under heaven that some general set of prescribed courses can prepare a student to do "anything he chooses." That is the myth of many "broad liberal arts" programs. Most especially what such programs do *not* do is to help a student to make up his mind; helping a student make up his mind is, in my view, the most important thing.

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[2] It is moderately easy to browse in books; they have the characteristic of allowing random access to any page. A book can be given the ten-finger test: open a book at random, put your finger down, and read a paragraph. But a film or a computer program is not subject to a ten-finger test. And we must find ways of helping the student here.

Problem II: The Problem of Retaining New Teachers in the Schools

Attracting and retaining new teachers are, I believe , both part of the same process. Many young prospective teachers thrust into the classroom during their senior year of "practice teaching" are so frightened by a lonely confrontation with twenty to thirty children that they decide then and there not to teach. Four years of courses in the history of, the philosophy of, the psychology of, the methodology of education are tossed down the drain. Some students in training survive the supervised practice experience only to find their first teaching job too difficult, too unmanageable, too overwhelming; they do not continue the following year. One can, I am convinced, avoid this problem of teacher drop-outs; one can have undergraduates begin to do some teaching during their freshman year and continue to teach increasing amounts of time and independence through their college years, and also through their first few years under contract to a school system.

If we are to begin apprentice teaching in the freshman year, two essential conditions must first be met: (1) there must be close cooperation between school systems and colleges which prepare teachers; and (2) we must have classrooms which are available to prospective teachers and, in those classrooms, materials, "methods," and "subjects" which can be managed by both the pupils and the prospective teachers. I have numbered these conditions not to describe an order, but to count the conditions; both conditions are interrelated, both are mutually beneficial members of the same set.

What I have in mind are classrooms in the public schools which are so organized and equipped as to make it possible for nearby college students to teach in them and for new teachers in the system to be "broken in." These classrooms would not be neat and tidy arrangements of six rows of five desks. There would not be one teacher who schedules the work for the day in equal time segments. These classrooms would be busy--busy perhaps even to the point of appearing chaotic. At least two teachers would be available to work with pupils in small groups of one's, two's, three's, or four's--perhaps sometimes with the class as a whole. One would find all kinds of material, all kinds of apparatus, and equipment available--microscopes, lenses, pendulums, typewriters, tape recorders, musical instruments, plants, animals, easels, an endless assortment of objects. One would also find the usual--pencils, papers, and books of all kinds: picture books, books without pictures, books with pictures, paperbacks, hardcover books, reference books, story books--everything from the comics to the Encyclopedia Britannica.

The classroom which I envisage is not an original, or an inspired, vision of mine. It exists in many of the infant and junior schools of England, most famously in the County of Leicestershire. If you have not already read or heard about Leicestershire's "integrated day," let me recommend Children and their Primary Schools, a report of the Central Advisory Council for Education (England), commonly referred to as "the Plowden Report." (You might also read the series of articles which Joseph Featherstone wrote for The New Republic). In addition, there is a booklet entitled Education for Initiative and Responsibility, written by Edward Yeomans for the National Association of Independent Schools. The Plowden Report is perhaps too long, and the Featherstone articles are perhaps too limited, but you will find Yeomans' booklet definitive and useful.

In the transitional classrooms which I envisage, one would find the latest units and materials developed by the many centers of curriculum reform in the United States. These materials would be used by the pupils, of course, but they would also be tried and used by the new young teachers who are beginning their preparation or their actual careers in the profession. Working in small groups, both the pupils and the teachers would enjoy relaxed and manageable learning situations. If close cooperative arrangements were made between the schools and the colleges which prepare teachers, college students could provide a constant supply of teachers, aides, and assistants for the kinds of classrooms of which I have spoken. The college students learning the subjects in their college classrooms and laboratories would have immediate experience in teaching material from the same subject to young children. The new teacher in the school would have the benefit of assistance and of the exchange of ideas with prospective teachers. And the pupils in the classroom would, I think, benefit from the whole process. Although I have here referred to the new classrooms, Leicestershire style, as "special" or "transitional" for the new young teacher, I cannot conceal my somewhat subversive desire that such classrooms would have an impact upon the other teachers in the school and upon the system as a whole, an impact which would eventually convert whole schools to their mode of education.

Problem III: Changing the Colleges in Which Professionals are Trained:

Obviously this plan for cooperative school arrangements enabling prospective teachers to begin teaching early demands tremendous effort toward reform within the colleges responsible for turning out new teachers. Schedules will have to be changed, calendars revised. "Faculty loads" will have to be rethought and "free" time provided for the faculty members to work on new courses and curricular changes. The walls between the so-called "professional scholars" and the "educationists" will have to come down. Such mechanical changes are tedious to make; they are not insurmountably difficult. What is very difficult is the development of new college and university approaches to subjects and disciplines which will make their teaching compatible with the recent advances in curriculum reform.

Some headway has been made in this area. At EDC we have found that many of the new courses, units, and materials specifically designed for elementary school, junior high school, or high school can also serve as an initiation into college courses. Courses are already in use in some colleges whereby the students learn sophisticated material in their own classrooms and laboratories and then teach the same material to pupils in the public schools. In several colleges in the Boston area, materials from our Elementary Science Study (ESS), from the Intermediate Physical Science (IPS), from University of Illinois Arithmetic Project, from the Biological Science Curriculum Study (BSCS), from the Physical Science Study Committee (PSSC) high school physics course, and from the Social Studies Curriculum Project have been effectively incorporated into (or redesigned for) college students--both for prospective teachers and for other students. Successful beginnings have been made in several of the State Colleges of Massachusetts in the sciences and social sciences. Similar undertakings are possible in the arts and the humanities as well, undertakings which would use the new ideas which are beginning to develop in those areas. EDC plans to continue to work closely on an expanded cooperative with the Massachusetts state colleges and with other colleges and school systems to bring about a joint program for the simultaneous reform of education in the schools and in the colleges, under the strong leadership of curriculum innovators and university scholars and professionals. This program might serve to stimulate similar ventures in other parts of the United States--and perhaps in other parts of the world. We would welcome the efforts of other curriculum development agencies, universities, and schools in attempting similar programs. The colleges would serve to test new materials and provide feed-back on trial materials. Their role would be to educate new teachers and, in addition, to proliferate and try out new materials and courses which they, and the agencies of curriculum reform, would be developing.

Later I shall describe more specifically how the new materials and methods are suitable for various levels and styles of education. But first I wish to discuss briefly the emerging problems and possibilities of technology in education, particularly those which are already having a large effect on the new courses.

Problem IV: How to Use the New Technologies

Radios, telephones, films, and television have been with us for several decades; they have been augmented by tape recorders, computers, teaching machines, and the other technological "spectaculars" of our age. We have been told that these are going to revolutionize education and our schools. Perhaps they will. But the truth of it is that, so far, these pretty promises have produced very little beyond a great deal of confused excitement. Much hard work remains to be done to prove the effectiveness of mechanized, computerized, or electronic education. If one considers how long it took us to learn how, when, and why movies--which have been around for half a century--could aid education, then one begins to understand what lies ahead in determining the role of other technological aids. One does not learn easily or quickly how to use a new educational tool. A great deal of time, effort, expense--a great deal of brain and brawn--must be applied to the problem of the appropriate use of television and computers before the schools can hope for quality education through electrical outlets, earphones, cathode ray tubes, and conversant computers.

We are now pressing hard on this problem in a number of ways in and around EDC and M.I.T. An intensive effort is being made at the M.I.T. Education Research Center, the Department of Electrical Engineering and Project MAC (Multiple Access Computers), an effort to discover how we can use computers to teach the subject of programming computers. This effort is conceived of as a first step toward a general use of computers in teaching, a program will very likely be followed by an effort to learn how to teach mathematics to students at M.I.T. through the use of computers. On February 7, 1968, a weekly seminar will begin at M.I.T. At the time of this writing, seventeen speakers representing seventeen different organizations have agreed to come to it to discuss programs which deal with the interaction of computers with other aspects of education. A similar program, directed more toward programmed learning, will take place at EDC. I expect that these seminars and colloquiums will go on for a long time; the subject of computers in education is certainly going to break open more and more as tremendous efforts in this direction now being exerted throughout the country are continued.

The EDC Film Studio, having been engaged in the making of educational films for over a decade, is now rapidly moving into the area of television. It is fully equipped for both movie and videotape production and is now directly linked to the facilities of WGBH, Boston's educational television station. Under a recent grant from the Ford Foundation, we are now experimenting with using television so as to permit (continued)

When one is offering formal education, it is improper to separate the subject matter from the method of its teaching. An even greater mistake is to believe that any one method should become the sole method used by education. No one of the electromechanical aids--or, for that matter, no one teaching style or method--should carry the burden of more than 25 to 30 percent of the learning process. It is terribly important that the electromechanical aids be worked on, studied, developed so that we can use them to convey a substantial portion of subject matter to students; however, they must do so in concert with the other members of the team of learning aids available to a student. Our fatal mistake is to believe that it is possible to plan ways to develop electromechanical aids without picking subjects which allow them to have the best break. Films and television are very, very inappropriate to some subjects; computers are very inappropriate to others; there are also subjects for which books are very inappropriate. But this does not mean that technology cannot help us with some subjects in some contexts.

Problem V: The Proper Relationship given to Professional, Vocational, and "General" Education

Fundamental to my whole proposal is the idea that there are topics which, given an appropriate methodology and appropriate material can be managed by and engaging to, say, ten-year-olds and also to older people. A topic which is appropriate to the needs and interests of children in elementary school should be one which can serve as the beginning of a multiplicity of possible trails leading to endless branch points. In other words, for some students, a topic should contribute to what we call vocational education, but not terminal education (education should always be potentially open--should open out to a profession or an avocation if a person so chooses later). For other students the same topic should lead

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participation by the viewer. Many excellent teacher-fims for training have already been prepared or are being prepared by such people as David Page, the director of the University of Illinois Arithmetic Project, and Uri Haber-Schaim, the director of the Intermediate Physical Science project. Other films relating directly to subject matter already exist in abundance for use in conjunction with the Elementary Science Study, the Social Studies Curriculum Project, and the Physical Science Study Committee's high school physics course; in addition, there are, of course, many films designed specifically for advanced college and graduate courses. While all of this experimenting with modern technology is going on, continued effort is needed in another, more basic area of curriculum development--the subject matter itself. How can we hope to use technology properly when we have not yet reached agreement as to what constitutes the necessary or desirable subject matter which will put into the available devices?

directly into a profession.

In elementary school one is trying to teach all kinds of children at the same time: some children are never going to finish high school; some will take jobs immediately after high school; others will continue their careers in higher education for two, four, six, eight, or more years. In one and the same school one finds future carpenters, mechanics, secretaries, nurses, doctors, skilled laborers, lawyers, scientists, writers, artists, musicians, and so on. There are also future teachers among these children. Their interest in the teaching profession may be born or buried in the first, second, or third grade! What is presented to this endless variety of adults-to-be must be as important and as engaging as possible for as many of them as is possible.

Let me give some specific examples of what I mean by a topic; all are examples of topics manageable-for-the-beginner, yet topics leading to an endless variety of other routes and side-routes:

1. Molds, bacteria, their growth and prevention.
2. Pendulums, resonance, and the sounds of music.
3. Light, shadows, optics, and vision.
4. Batteries, bulbs, circuits, and computers.
5. Small animals, large animals, and the survival of a species.
6. Peas, particles, probability, and statistics.
7. The law, individual rights, and the rights of a group.

Such a list may not make obvious what I mean; let me take a few of the items in the list and describe the sort of learning which can take place as part of the exploration of a topic.

Let me turn to Topic I on my list, "Molds, Bacteria, Their Growth and Prevention."

William Weston and his colleagues in the Elementary Science Study at EDC devised and published a unit centered on the study of the growth of molds. This unit, called "Microgardening," was intended for use in the middle or upper elementary grades. The following passages are quoted from the _Teacher's Guide for Microgardening_:*

I WHAT ARE MOLDS LIKE?
(_Three activities, about 7-10 days_)

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* pp. 4-5, _Teacher's Guide for Microgardening_, Elementary Science Study, Educational Services Incorporated, Newton, Massachusetts, 1965.

With hand lenses the children observe mold growing on bread and discuss what they see. The class starts a mold garden to determine what things will mold. Challenged to grow mold on a piece of bread and given the freedom to try whatever they think will work, children immediately become involved with basic questions. As their bread begins to mold, they try to sort out the reasons for this development. If microscopes are available, the students can examine the details of mold structure and make comparisons among different kinds of molds.

II WHAT INFLUENCES THE GROWTH OF MOLDS?

(Four activities, about 4-5 weeks)

The children are encouraged to set up experiments to show the factors that influence the growth of molds. At first their experiments may be indeterminate and confusing, but through mistakes and successes they encounter the need to sort out and test variables such as water, light, and temperature, one at a time. The children are given a chance to apply the knowledge thus gained by investigating how to prevent mold from growing on bread.

III WHERE DO MOLDS COME FROM?

(Five activities, about 4-5 weeks)

The children are introduced to a fundamental technique --sterile procedures. The children expose culture dishes of sterile potato agar to the air and discover a flourishing growth of mold a few days later. They then try to grow just one kind of mold by placing spores on sterile potato agar. Further experiments confirm the fact that spores, although invisible, are nearly everywhere, but they are not to be found in healthy living tissue. These experiences help the children to grasp the significance of historic events such as Pasteur's experiments on the presence of spores in the air, and to understand some of the principles of aseptic surgery and the germ theory of disease.

IV WHAT CAN MOLDS DO?

(Three activities, about 3-4 weeks)

The children grow pure cultures of a species of *Penicillium* which produces penicillin and then seed the cultures with harmless bacteria. The results of this experiment lead to a discussion of antibiotics in general and of Fleming's discovery of penicillin.

After observing some seedlings that have begun to mold, the children develop the idea of isolating the mold, growing it, and then inoculating healthy seedlings. Having thus followed the historic steps of establishing that a microorganism such as a mold can be the cause of disease, they discuss the story of Robert Koch, who first worked out this procedure.

Looking further into what molds can do, the children refer again to the mold garden, and discuss the role of molds in breaking down materials.

V WHAT INFLUENCES THE RATE OF MOLD GROWTH?
(Two activities, about 2-3 weeks)

This area offers an opportunity for experimentation with more precision. Using growth tubes containing sterile potato agar inoculated with pure cultures of molds, the children compare rates of growth of various molds. They also investigate the effect of alternating daylight and darkness on the rate of spore production of certain molds. With the growth tube as a tool, children with special interest and motivation can go on unendingly devising experiments as time and equipment allow.

As you can see, Microgardening is not just a matter of memorizing facts or learning what science is about. It implies a genuine involvement with the style and meaning of what science actually is. The pupils may read some books, look at some pictures, and do some writing, but they primarily work with living molds and bacteria. They learn how to operate microscopes, how to make slides, how to predict what might happen, how to record what does happen, how (or how not) to control an experiment, and how to make use of mistakes as well as successes. The description from the teacher's guide already suggests some of the avenues the student may follow, once his attention and interest have been engaged in observing the "real stuff" of nature. Many of the pupils may lose interest and stop their study once they have gained some familiarity with the equipment, apparatus, and terminology, and with the fundamental nature of molds. Others may go on to read the ideas, or to recreate the experiments, of great scientists of the past. Right here some future laboratory technicians, nurses, doctors, biologists, chemists, or science teachers may get their start. Or it may be that what is learned from this unit will become part of the useful store of information and knowledge basic to an acculturated man. The important thing is the kind of approach to the study of bacteria which I have described can be an important beginning for some students, it can be indispensable to future education for others; it is desirable for most students. Only a few students will wish to omit it.

This unit is only the beginning. The topic can be developed on into college, into schools for nurses, into graduate school, into medical school, and so on. It would not be sensible for me to try to describe the proposed paths which would develop the topic. Such a description and the material to go with the description must be done by collections of people having enough wisdom, detailed knowledge, and educational insight to do the job; many meetings of many people for many weeks will be necessary.

Another unit, that on Batteries and Bulbs, involves the manipulation of simple apparatus as part of learning about electricity. The average pupil may stop playing with the equipment when he has satisfied his curiosity about how electricity works by connecting a wire from some batteries to make a bulb light up. But some few pupils will go on to figure out what they can make electricity do. And these pupils may be the potential electricians, wiremen, technicians, electronic engineers. physicists, computer designers or programmers, or repairmen for telephones, radios, television sets and computers. Or they may be only the future do-it-yourself buffs around the home.

A better example from my point of view, because so much physics is ultimately involved, is the topic which I call "Pendulums and Resonance." This topic grows out of a school unit prepared by the Elementary Science Study of EDC. It has been copiously tried out, revised, and blessed; there is a teacher's guide. Taking this topic, I have been trying to make television-style programs which suggest and invite the viewer to attempt some experiments for himself. How? First let me try some words: I shall soon advise the reader to stop reading and experiment, just as I shall advise the television viewer. First, find a soda straw, two 4' lengths of button thread, two thin nails, and two apples (or two 1-ounce fish weights, or two golf balls, or similar objects.) Drive the nails into a door frame a little less than one soda-straw length apart. Now make two pendulums. Cinch up tight on the nails so that the pendulums swing freely and confortably. About 6 inches down from the top, loop the threads over the soda straw, making a nice rectangle. Now you are ready. Move one plumb bob over near to the other--and let go. Stop reading....

Have you swung one pendulum out of the plane of the two strings (or out of the way of the other pendulum)? Have you tried circles, angles, different positions of the straw, and different lengths? If you have been doing these things, you have probably begun to wonder: is this too complex, or can a historian understand?

My set of television films will be addressed to college students. Each film will contain a cliff-hanger to coax the student to experiment. Presently, the film asks why this behavior is as it is. Can we understand? Surely, but only by understanding resonance. Watch one pendulum as I push gently at the top "in resonance". Can I stop the motion by "anti-resonance"? Now (cliff-hanger) can you see how one pendulum drives the other and how the other stops the first? At this point we are just beyond most ten-year-olds!

Rather than continue in such detail, let me offer some questions to be asked on these films:

1. Pendulums: What are the "laws" for one pendulum? What does the period depend on? What not? Anything not? What approximations are we making with every statement? Do scientists live with only approximations?

2. Resonant phenomena: Watches and clocks, bath tubs, tides, and the Bay of Fundy or Inchon. Automobiles, wheels, shimmy, and all that buzzing leads to musical instruments: strings, reeds, woodwinds, brass, percussion, and human larynxes. How can continuous blowing on the vocal cords make speech? And let us not forget resonance in radio and television, the emission and absorption of light, and quantum mechanics. Nor should we forget the mathematical mind, the artistic, and the practical. Something for everyone--no; not for someone who isn't looking or who is looking the other way.

That is a sketch of the subject from grade school to graduate school. We begin with reality and with films, with notes, books, guides, and questions. And we must learn the role of programmed aids and computers, too.

Naturally, because I am a scientist the science units which I have described are the simplest for me to describe and support. And it is true that EDC's strongest beginnings have been in the sciences. Nevertheless, I am convinced that similar things can be done in other areas of the curriculum.

We have been trying, for example, to launch a program using the law in elementary education. I here quote parts of a tentative proposal to EDC written by Jean and Edgar Cahn, a husband-and-wife team of lawyers who live in Washington, D.C.:

> The case method developed in the law--for talking about particular events and particular individuals--is inherently dramatic and real. We would want to stress that this method might provide the opportunity for youngsters to learn certain legal rules in areas such as school expulsion, welfare, the landlord-tenant relationship, torts, contracts, criminal laws, learning of a kind that might be of direct utility and

even of marketable value to youngsters later on.

But we would insist that the learning of sets of rules must be subordinate to a conceptual approach which enables youngsters to deal more easily with their own problems and to understand better the nature of the social reality in which they live. Rules are the expression--often imperfect--of certain underlying legal concepts as they relate to particular factual situations. The immediate pay-off in this program would be the development in pupils of:

a keener sense of reality;
an enhanced analytic ability;
a change in attitude about the possibility of fairness;
a keener sense that one is not always personally helpless;
a fuller sense of dignity and citizenship.

But, ultimately, the pay-off from the study of the topic would be a society that has come, in the most pervasive sense, to understand and respect the rule of law and to participate in its evolution.

It is of critical importance to our society that youngsters understand the rationale behind an adversary system which allows both sides to give their views of the facts (on the assumption that this increases the chances that the truth will out). This adversary system or procedure underlies our notions of due process, and a fair trial, and also of representation by counsel; beyond it and related to it are certain substantive concepts implicit in constitutional law, civil rights, contracts, and torts. We would suggest starting off with the following kinds of "cases," having in mind the explicit purpose of exploring both the procedural (or evidentiary--reality-testing) aspects of the cases and their substantive legal aspects:

Case I: "But, teacher, I didn't do it." (This kind of case would allow pupils to examine how to determine facts, how to check the credibility of statements, how to give meaning to the presumption of innocence; they could look at how past conduct weighs into a determination of credibility, how the testimony of witnesses is of use, and what the right of the accused should be to reply and introduce evidence on his own behalf.)

Case II: "But, teacher, I disagree with school rules on dress." (Free speech, flag salute cases--why people are allowed to dissent and disagree, what the limitations on free speech are--yelling fire in a crowded theatre--rights of the minority.)

Case III: "But, teacher, you promised you would do that." (When is a promise binding? Do you have to give something in return, or at least rely on the promise? What if a man says, "I'll give you a million dollars." Does he have to keep that promise? Under what circumstances? What if a man says, "I'll make you a special model plane," and the loses both hands in an accident? Notions of damages, exchange of promises.)

Case IV: "He scared me, teacher." (Is scaring a person harming him? What is the element of intent required? What if the scaring was followed by an act of physical harm? How to assess damages? What kind of punishment is applicable? Should the punishment be proportioned to the injury? What is the purpose of punishment?)

Case V: "But, teacher, you told me I could do that." (Application of rules, interpretation of rules, tests of reasonableness. What is involved in interpreting an instruction? What is "taking advantage of permission to do something"?)

Obviously, discussion of the sort implied by the cases cited and experience with similar cases is going to benefit future jurors, lawyers, businessmen, and legal professionals. But it is also an introduction to the full meaning of being a citizen of the United States.

You will notice that on the list of topics which I have suggested is one I've called "Small Animals, Large Animals, and the Survival of a Species." I have in mind here the Social Studies Curriculum Project which was originally conceived for EDC by a group of people led by Jerome Bruner. The intention of the plan was a series of films which would present the evolution of man from prehuman existence through the higher forms of cultural and social development. Included in the films were to be pictures of salmon, of herring gulls, and baboons; of Eskimo nomads, and, finally, of urban dwelling peoples. The films of the Netsilik Eskimo have been highly successful, for instance. They have been pertinent and useful not just to anthropology, but to many other disciplines as well. The physical features, family life, food-getting techniques, and social organization of the Eskimos, as they are presented on the films, can be readily observed by the sociologist and the anthropologist. But the geographer, meteorologist, scientist, biologist, and other students of human life and culture have likewise found the films valuable to their work.

What I am saying, in summary, is this: that education should not be regarded, much less planned, as a self-contained, dead-end scheme. I want here to call upon David Hawkins' comparison of education to "going through a maze" or "living in trees". In a maze there is only one "correct" path; there are many "incorrect" paths. If one lives in trees, however, one finds there many branches and branch points, leading to more branches. New branches are always sprouting. All of these branches lead out from the tree-some higher, some lower; some shorter, some longer. And it is always possible to switch to another branch and still get somewhere. To apply my metaphor to education, I see no reason why a pupil who has chosen one path at a certain point should not be able to take a different path later. Education should permit him to decide to do anything at any time, but it should also permit him to change his mind--many times, if necessary. I do not see why a pupil should be forced by the system or the curriculum to prepare for one thing when he is, say, thirteen, and find that the next four, six, eight, or ten years are irreversibly fixed--whether he has decided to become a teacher, a doctor, a scientist, a writer, an artist, a salesman, a clerk, a mechanic, a fireman, or whatever. The danger which besets education is that it may be so tightly planned as to become terminal--terminal in number of years and courses of study, but, even more dangerously, terminal in that it sets absolute limits on an individual's freedom of choice.

All of us must then decide how best to use the old and the new, the teacher and the machine, the book and the television, the medium and the message. There is no reason why all cannot be used. But first we must make the more important--if not all-important--decision as to what topics, what skills, what subject matter, what "possible branches" are most suitable for our young people. Only then can we use the available ways, use them for the education of the many kinds of people it takes to make a world.

Critique

Raymond English
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Before discussing the valuable contributions in the papers of Doctors Singer and Zacharias -- papers which form a fitting climax to our proceedings -- I should like to glance briefly at the Conference as a whole, with a view to surveying the situation and prospects of elementary education -- or rather of improvements in elementary education. The most necessary consequence of such a conference as this is that practical effects be felt. I know only too well, from personal experience, the gap between intention and achievement in educational reform. I never attend a conference on educational reform without recalling Johnson's remark to Boswell, when the latter asked him which subject a boy should learn first -- Greek or Latin. Johnson said that it didn't matter, anymore than it mattered which leg you first put in your trousers: "You may stand debating half-an-hour," he said, "but in the meantime your breech is bare." So it is with education today. We verbalize, orate and neologize. We achieve little.

I sympathize with Dr. Donald Bigelow in his urgent plea. What was it he asked us to do? First, to challenge the high priests of the educational hierarchy -- the "establishment" of the University's Teachers' Colleges -- and get them to do something useful. And, second, to define what elementary education is. I, personally, am not really able to do either to my satisfaction: Dr. Haubrich had a good smack at the first. As for the second, the defining of elementary education, let me have a smack at it:

> Elementary education is formal schooling, from an early age (no matter how early) up to the age of eleven or twelve. It has a threefold purpose: (1) to keep children busy, well-adjusted and out of mischief; (2) to teach them the tools and habits of learning; and (3) to provide them with some skills and knowledge that will be useful throughout their mature existence.

It is, I believe, important to keep the three objectives or purposes in mind and in balance.

Before I go on to discuss what practical improvements have been proposed or are possible, let me say a word of praise. By and large, our elementary schools do a good job. It is true that they have not been too successful with the alienated slum child, but I beg leave to doubt whether any formal school system short of boarding school will overcome that problem. (How can schools, which have the children for seven hours a day, five days a week, less than nine months of the year, overcome the massive incubus of a disadvantaged family background?) It is true, too, that the elementary schools are very weak in social studies and natural science, and often rather ineffectual in overcoming the problems of "slow readers". But, compared with the secondary level of education, the elementary schools shine like a good deed in a naughty world. I should like to caution you against becoming overly enthusiastic about what is being done in elementary education in England. A system of education that fits a politically and economically decadent society -- and I use the terms clinically -- is almost certainly unsuited to the dynamic, powerful, responsible, and competitive society which exists in contemporary America. We have had enough problems left to us by the educational heritage of the years of isolationism and depression (a heritage of which Professor Freeman Butts reminded us); we do not need to compound those problems by copying educational ideas from a nation in a state of shock.

Just what is the way to achieve effective improvement in education -- and in elementary education in particular? As Mr. Haubrich told us, the American system of public education has vast, built-in, conservative controls. They enable it to develop its own version of Orwellian "Newspeak": "Reform is Reaction, Change is the Status Quo, Words are Deeds." The American academic and scholastic professions are the most liberal groups in our society today -- liberal in attitude toward everything except their own professional concerns. In their own bailiwick -- education -- they are capable of endless rearguard actions against innovation. That is why a conference such as this may produce no effective results. I suspect that reform (or research-and-development) in public education is comparable to reform in the armed services. As in the armed services, we have in education a vast problem if we are to change the great numbers of people involved, the numbers of units of organization; in education the problem is thirty or forty times greater than in the armed services. Education, like the army, has to deal with the average, the below average, and the conscripted persons. Like the army, education is a going concern: you can't stop production for a year to retool and reorganize; you can't fool around with experimental reforms that may be disastrous; whatever changes are introduced must be carried through without breaking into the main job and routine; they must be understood by every officer -- or administrator and teacher -- concerned. The inertia of the military mind used to be a by-word among the intelligentsia; yet the military mind has adjusted to ongoing and incessant research-and-development. Given such an example, it is not beyond the bounds of possibility that our educational elite might achieve a comparable adjustment. The ends which we seek will not be attained without great efforts. We shall need research-and-development on a massive scale -- practical, on-going research involving hundreds of thousands of ordinary youngsters, in ordinary classrooms, research taking into account the teaching ability of thousands of average teachers. (This, by the way, is the method used by the organization of which I am a member -- the Educational Research Council of America.) Such massive research-and-development demands, in turn, a massive production of materials of many kinds for pupils and teachers. And these in turn call for massive efforts of teacher-training-and-retraining. The thing can be done if we stop talking and do. We have extraordinary technological resources at our disposal. We have widespread popular interest and support. If the reactionaries who have run the army and the navy could adjust to the twentieth century, it is not too much to hope that the educational establishment can do the same thing.

The papers of Doctor Singer and Doctor Zacharias are profoundly in tune with the mode of action which I have just suggested; both papers stress the need for action on a wide front and in practical terms: both stress the need for intensive teacher-training, for immediate, widespread curricular reform, and for the production of viable, well-made, and flexible materials for direct use in the classroom. In Doctor Singer's words:

> We are not engaged in the study of education but in the practice of education.

At the risk of distorting some of the proposals which Singer and Zacharias have made, let me list what in them made a strong appeal to me:

1. Their pragmatic attitude to educational reform -- what one might call the research-and-development attitude as opposed to the basic or pure research attitude.

2. Their sense that we need a flexible choice of projects and materials which will enable us to suit educational offerings to individual students.

3. Their emphasis on the substance of knowledge rather than on the methods of instruction or the processes of learning: An interest in method and process has been used too long as smoke-screens to prevent reform and to conceal ignorance.

4. Their suggestion that the classroom become more and more a "workshop": By this I understand that students will engage in far more independent work and study than they have done in the past. Heaven knows, the students need to learn to work by themselves; and, even more, teachers need time to think and to criticize and correct work done. Teachers also need to rid themselves of the habit of constant

personal activity on their part in the classroom.

5. Their emphasis on student initiative and ingenuity -- what Doctor Singer calls "learning to ask the right questions": As I understand this, it means helping the student to be original, to work things out for himself, to develop confidence and style. The best private schools have always done this; so do some of our outstanding public secondary schools. (The high faith in the student expressed by Dr. Singer is also something which I approve of, and which our work at ERC has confirmed; notice, however, that only a teacher with considerable knowledge and competence can be relaxed enough to encourage real originality in a student -- a point which brings us back to the importance of substantive knowledge.)

6. Their emphasis upon the need to use all available technological devices to lighten the teacher's load and provide greater choice for the students.

7. Their concern for the disadvantaged student, whose needs, presumably, will in part be catered for by the wide-range of materials and projects that will be available if and when massive research and development is done. I would repeat, however, my earlier suggestion that the hard core problems of the disadvantaged may be insoluble so long as family and community pre-empt three-quarters of the youngster's waking existence.

I have made clear my enthusiasm for the proposals of our last two contributors. May I now add some criticisms. I hope that my suggestions will not prove incompatible with the essentials of what Mr. Singer and Mr. Zacharias have proposed.

1. I am a trifle disturbed at the emphasis in Mr. Singer's paper (and Miss Duckworth's) on making learning "congenial" and "fun". Singer defined "congenial" as "relevant and significant", but we may forget his definition; and then we need to be reminded that many of the things which we have to do in life are uncongenial and far from amusing. If our educational system fails to prepare us for the grim, the tough, the severe discipline, it will fail to produce the type of character needed to preserve a free society. There may be no need to dwell on this; life is always pretty tough for children. Nevertheless, any effective education must include, must consciously include, hard work, discipline, and challenges that enable youngsters to taste failure as well as success.

2. My second and more serious criticism of the Singer-Zacharias thesis is this: I object strongly to the general shapelessness or plan-

lessness of their type of curricular reform. I cannot accept Dr. Zacharias's assertion that "Education should not be regarded, much less planned, as a self-contained, dead-end scheme." Notice the loaded adjectives in the statement. And, in another place place in his paper, he says: "I do not see why a pupil should be forced by the system or the curriculum to prepare for one thing when he is, say, thirteen, and find that the next four, six, eight or ten years are irrevocably fixed -- whether he has decided to become a teacher, a doctor, a scientist, a writer, an artist, a salesman, a clerk, a mechanic, a fireman, or whatever. This is the danger of education, that it may come to be so tightly planned as to become terminal . . . ." I cannot accept that assertion either. Mr. Zacharias has given us what Justice Holmes called "a parade of imaginary horribles." I certainly do not propose a closed system of education; I do suggest that a sequence and a steady accummulation of knowledge are essential. Dozens and dozens of brilliant units with hundreds of bits and pieces of material and activities as suggested by the Singer-Zacharias "non-plan" are liable to produce anarchy in the school curriculum and chaos in the students' minds. Possibly natural scientists do not need to learn in logical progressions: I do not know. But I am sure that mathematics has a logical progression; so have reading, writing, using language; and so, less obviously, do the social sciences. I believe that both teacher and student benefit from the knowledge that there is a firm, logical, cumulative structure of "information," understandings, skills (methods) in each given part of the curriculum. The student should know where he has been and see dimly where he is going; he should be steadily acquiring a body of usable knowledge to apply to new situations or to unprecedented conjunctions of facts. He should be able to feel confident that his intelligence will not suffer repeated insults when the 5th grade teacher goes over the material covered by the 4th grade teacher--material already dealt with by the 3rd and 2nd grade teachers -- material, moreover, which none of the teachers cares enough about ever to find out whether it was covered before with the members of the class. (How many times do the Pilgrims land and meet Squanto from Kindergarten through sixth grade? How many times are the Plains Indians and Eskimos studied? Who bothers if American history is repeated four times, or if one teacher teaches the mythology of American history, while another gives a cynical debunking version of it all?)

Whether a person is going to be a physicist, a surgeon, an automobile repairman or a short-order cook, he is still going to be a person -- who should have the fullest chance of realizing himself. He is going to be a citizen -- who should understand his society, his world and his relations with his fellow-men. After Dr. Jules Henry's diatribe against social studies textbooks (not that I am sure that I would trust a textbook on political science or economics written by Dr. Henry); but, after his diatribe, is it necessary to argue for a planned framework of knowledge to which every youngster ought to be exposed and which will give the teacher a sense of direction and -- it is to be hoped -- confidence? We in the profession talk a great deal about the student-centered curriculum, but in fact we are usually talking about the 1st-grader-centered curriculum or the 4th-grader-centered curriculum. We have Spocked-and-Geselled our clients into schizoid vertical sections. We concentrate too much on the function of keeping the child at a certain age busy, adjusted and out of mischief; we forget that each child is a person, a being existing and growing in time, a person with a memory of the past and a vague hope and fear of the future. If we had an adequate plan for education from K through grade 12, there might be much greater understanding and effectiveness in our classrooms than there now is. The teacher as well as the child must know where the group has already been. The teacher, and the children, must know fairly clearly what they were doing and why -- where they were going in ensuing grades. In short, I want to plead for a combination of the flexibility and variety of the Singer-Zacharias approach with a fairly clear and well-worked out syllabus. In the Greater Cleveland Social Science Program we have concentrated on the latter aim. For instance (and as a symbol of our concentration), we now have a chart for the classroom wall -- a chart on which both student and teacher can perceive at a glance the major concepts developed in previous grades and the topical material used to illustrate the concepts at any given point between kindergarten and sixth grade; we have also developed and tested basic classroom materials for pupil and teacher, and are now trying to comply with Dr. Singer's prescription that many varied materials be developed to cater to individual student needs. We also hope that materials developed by other organizations will supply additional useful stuff for our orderly program.

3. In this connection, I can also see the need for something that several persons have condemned in the present conference. I mean general tests of conceptual knowledge and basic skills, to be administered at each grade level. Such tests need not be used for grading, but only as guides for teacher and student as to the aims and objectives of a program and a student's or a teacher's success in achieving them.

4. I think I disagree, too, with Dr. Singer's reliance on the federal government's aid in reform and change. In the Educational Research Council of America, we have no federal aid; yet, we have managed to get a considerable amount of change and reform under way, in more than thirty school districts. It may well be that reliance on federal help will delay research and development rather than en-

courage it. If that is biting the hand that fed this conference, I apologize. It is difficult to avoid corruption in the presence of vast quantities of federal funds.

If I may be so presumptuous as to sum up my own impressions -- based in part on our proceedings here -- of what practical steps are needed to improve elementary education, I shall list them as follows (not in order or priority):

1. The development of some broad plans for the curriculum K - 6, based on our assumptions as to what the youngster will need to know (and recognizing that similar sequences will be worked out for the grades 7 - 12).

2. The production of many types of materials for pupils and teachers to implement the plan with heterogeneous students (this includes catering to disadvantaged students).

3. The creation of materials for and institutions for improved teacher education and re-education. Such materials and institutions would allow for frequent refresher and up-dating courses, possibly using television and video tapes.

4. The exploitation of new technological devices in connection with the production of materials.

5. The development of challenging tests to fit our new and more sophisticated notions of education.

6. The development of replanned classrooms and schedules which would encourage more independent work by students -- more freedom to think and "grade" for teachers.

All of this may sound Utopian. I'm sure that it sounds presumptuous. But there it is. My hope is that real, practical improvements will result from this conference. I have submitted my contribution. Let us stop debating which leg to put in our trousers first. . . . The winds of change blow somewhat coldly.

Final Responses from the Floor

Freeman Butts:

I've felt more sobered than exhilarated by the response to my general theme [i. e. in Mr. Butts speech to the conference] that education at even the elementary school ought to be concerned with the overriding policy questions that face this country and the rest of the world; we have almost ignored that point and with some very good reasons. We have been oriented otherwise. We've found the much more direct and practical matters of greater concern; I do, too. But, somehow I have the feeling that we slough off questions that get down to matters of fact or substance. There has been talk about substance today; history came off very badly again, especially the history taught in the elementary schools [Mr. Butts is referring to Jules Henry's speech: Ed. note]. And the question is, "How on earth do we bring substance on the most vital issues into the schools?" I'm sure I haven't got the answer: I'm certainly not in any mood of complaining nor of chastising the rest of you who are in the same boat that I'm in. But I do wish we had talked more about it. I must say that the response of the eleven groups to Professor Henry's charges seemed to me to suggest that Professor Henry's speech just slid off the backs of the people at this conference, maybe mostly because we didn't really like to talk about the problems which Mr. Henry posed.

I think that it is interesting that the Social Studies have been the last subject area to come in for curriculum reform. I'm looking forward eagerly to some of the developments in the various new projects in the Social Studies. I'm sure they won't be as fatuous as some of the books from which we heard quotations this morning; but will they get any closer to the real problem, which is that teachers and administrators and professors don't themselves face questions of basic social policy as subjects of study, subjects of inquiry, or subjects of "criticism"? We don't face real policy questions in the schools to the degree that we should; we don't do it in the colleges or the universities.

I have a specific recommendation; Professor Jules Henry said the Schools of Education couldn't do anything that the Liberal Arts colleges couldn't do. All I can say is, "We've got to." We must do--the Schools of Education must do--a systematic study of the relationship of education to the social, political, economic, and the international efforts of this country and other countries and do it in relation to the formation of national policy. We have to make such study a larger component in the education of teachers if the students don't get it in the ordinary course of their college and university education. This is what I think we've got to be about most of all. I hope some of us will be about it.

Fred Gearing:

A brief comment with respect to the matter that was raised in Mr. Singer's paper--the question of the accessibility of the realm of the social sciences to the minds of very young children. May I suggest that our common experience is that children considerably before kindergarten can correctly use an array of words which have to do with the "realms of the social sciences"--that is, "grandfather," "grandmother," "father," "mother," "aunt," "uncle," "brother," "sister," "cousin." They can use these words in such phrases as "My father," "Johnny's father next door," and so on. And, furthermore, they can use them in hypothetical constructions, such as those used in playing house. Now, if you would think of this use of a lexicon about kin as a classification problem, and translate your "words" into classes--thinking of generations of which there are three; sexes, of which there is two, and something which we can just call lineality, of which there are two--you have a complex system of classification implied by this simple word.

Now think of the simple classes as attributes. Translate the job of talking about kin into the job of making attribute blocks; you will recognize that you need a great number of blocks, containing at least three-dimensional matrices. Children do this kind of classification before kindergarten. They do it because all of these categories of kin are names. They get the names first; they gradually zero in on the classes that the names represent, and lo-and-behold, they know a fantastic classification system. You can't start with attribute blocks and get up to that.

What I'm saying is simply this, and with only a little illustration. Let us not get so hung up in respect to "readiness" in the realm of the social sciences. There is a great deal of scrutiny necessary as to what it is out there in the phenomenal world of human behavior that can be attended to, and then, if we bear that in mind, we need to give a great deal of close scrutiny to what kids can do with the phenomenal world. What the physicists do looks terribly difficult to me; I'm always wonderfully surprised at how magnificently simple it can become with knowledge. The obverse is also true. A great deal of real nitty-gritty type of social science learning is possible at the very earliest ages. We'd better get started with it.

Jimmy Britton:

I would like to raise a point. I feel I ought to, because it concerns what happened this afternoon--the two speakers and the respondent this afternoon. I think we're in some likelihood that we're allowing language to betray us into a sense of agreement. It seemed to me that much that was being said by Professor English could in fact not be said to be an amendment to what was in Mr. Zacharias' paper. Mr. English approached the problem from a very different point of view. Perhaps I can put this best in an indirect fashion.

If we think of this "Greater Cleveland" schedule of what is found to be desirable as a body of knowledge in social studies as placed on the notice board in all classrooms (as the "core" to which children should be exposed) and if we then have materials produced in the quantities that Dr. Singer spoke of for use by teachers and then by the children and in connection with this that is now up on all the notice boards, we are looking at education from a diametrically different point of view from the one from which we have looked at it in the earlier part of the conference. We have earlier seen it above all as process. The conception of education as a "chart-with-steps" and the conception of education as a process are not compatible.

Raymond English:

They are not compatible if you insist that the process, the activity in the classroom, is all that matters. They are compatible if you say, "When we're having activity; let's make sure it has some economical use, that it isn't just busy work to keep the kids amused, or to get them into the habit of talking or not talking or whatever it might be." I think my idea of elementary education is that it has three aims. Its first aim is, certainly, to help the kid to become well adjusted, to live at his own age level group, to keep out of mischief, and so on. Its next aim is to enable the student to get into the habit of learning and the habit of using certain basic tools of learning: reading, writing, speaking clearly, spelling, computation. But the third aim of education, what one does in the elementary school is, I hope, to put certain knowledge and skills into the youngster's head and hands and mind, skills that will be with him throughout his life.

From the moment one starts teaching the youngster, you're teaching him some things that are just suited to his own age level, but the really important things that one is teaching him are things that you hope he'll retain and be able to use all through his life. In that sense, there is a very real case for thinking hard about what you're going to try and ask him to remember all his life, as opposed to the things that you're only doing to get him in a certain mood or to give him certain habits.

I'd like to turn to the question which was raised by the previous speaker, about social science in the elementary school. We have found in the Cleveland program that it is quite possible to teach very serious social science from kindergarten onwards. We don't try to teach history. At the moment, many people think of social studies as history. And history is certainly the hardest of all the things for a youngster to grasp--history with its sense of time, of chronology, and of filthy boredom (unless you are really cut out to be a historian). I was trained as a historian; I enjoy it; it's tremendous. But for most youngsters, that awful business of saying, "you learn it because it's there, because it happened, just as Sir Edmund Hilary climbed Mt. Everest because it was there--" this is an awful bore to most youngsters.

What we've tried to do in our program, right through, actually, is to use history not so much as an end in itself--which it can't be for most people--but as a "laboratory" in which one tests out hypotheses from the other social sciences--from political science, economics, sociology, anthropology, and so on. We use geography also, partly as a science in itself, and partly as a laboratory where one tests out certain hypotheses.

So, it is quite possible to get a kindergarten youngster to understand the difference between an inefficient way of doing something and an efficient way (by dividing the work up). He can see the difference between a reasonable rule and an unreasonable one--really the basis for teaching the sense of political obligation in later life. He can understand the structure of the family. As in the second grade, youngsters can compare the nuclear family (the small family of modern industrial America) with extended families in India or the incredibly complicated families of the Australian aborigines.

APPENDIX

Response to Jules Henry's "Education for Stupidity"

Phillip Bacon
Professor of Geography
University of Washington

It is difficult to imagine a teacher in America, or anywhere else for that matter, relishing identification as a purveyor of stupidity. Having been cited by Professor Henry as an occupant of that dubious role in American education,[1] I feel compelled to protest. In fact, there is much about Professor Henry's paper that merits serious protestation; however, I shall confine my remarks exclusively to his comments about the book with which my name was identified.[2]

Inasmuch as Professor Henry chose to make his points through citations to names, dates, publishers, pages, and quotations, it does not seem irrelevant to point out that in the two brief paragraphs that he devoted to Basic Social Studies 4 there are several errors of fact that are clearly evident of careless research and documentation. Professor Henry says, for example, that "The section on cotton in the United States extends from page 79 to page 84." Had he taken time to carefully examine this book he would have found that Unit 3, "Growing Cotton," actually extends from page 65 through page 84. The fourteen pages that he fails to review, or even to note, are, in fact, the pages that build the conceptual stage for the four page picture story that he suggests covers so superficially cotton growing in the United States.[3]

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[1] Jules Henry, "Education for Stupidity (Toward a Sociology of Ignorance)", paper read at the National Conference on Elementary Education, New Orleans, February 2, 1968.

[2] Adaline P. Hagaman and Thomas J. Durell, Basic Social Studies 4 (Evanston, Illinois: Harper & Row, 1964).

[3] Professor Henry makes three additional, albeit minor, factual errors in those two paragraphs. His reference to "Question two" on page 132 of the teacher's guide really refers to question five. He implies that there is something wrong with the question because it refers to truck farms in the Rio Grande Valley of Texas. Had he carefully read the text he would have discovered that the authors had a section in the cotton unit explaining the variety of land-use patterns on the Gulf Coastal Plain to demonstrate that cotton does not hold exclusive

The above is cited to demonstrate that none of us, including our critic, is free of taint when viewed in the cold light of analysis. Far more relevant, however, and certainly much more to the point of Professor Henry's argument, is the place of this book under his heading "Stupidity About Negroes." I take it that, from his view, "the Negro problem" should have been discussed in the pages to which he refers.[4] I find this particularly interesting for the idea never occurred to me in April 1960 when I critically reviewed the manuscript for the publisher.

In rereading these pages today, in light of the vastly enlarged public concern for "the Negro problem" I still see no reason to discuss the topic here. To explain, let me quote from a letter from Dr. James I. Clark, who was Social Studies Editor for Harper & Row at the time this book was written. Dr. Clark asked, in his letter, that I, as a geographer, check the accuracy of the concepts developed in the manuscript. Why a geographer? Perhaps Dr. Clark's words make this clear:

> We want to limit the book to a few landforms, the oceans, and the natural resources of the earth and the use to which they are put. We deal with soil and a few crops, grasslands, forests, minerals, water, and the ocean resources.[5]

In light of the content of the book, then, "the Negro problem", as Professor Henry puts it, strikes me as being totally irrelevant. Perhaps he sees it as being relevant because of the historical significance of the Negro and the growing of cotton in the South. Frankly, we allocated these pages on cotton to show the dramatic changes that have taken place in the land-use patterns of the old cotton belt. It simply

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dominion over land use and that other forms of land use, including truck farms in the Rio Grande Valley, are frequently found. Finally, he refers to page 84 as "review and instructions to the children about what to think." Review, yes, but the remainder of this statement is irresponsible. Following the review section, page 84 contains a variety of suggestions for class activities, including discussions, field trip ideas, map and art activities, and a bibliography for further study.

[4] How helpful it would have been for a textbook publisher to have been able to forecast a decade ahead contemporary interest in "the Negro problem."

[5] Letter from James I. Clark to Phillip Bacon, April 1, 1960.

is no longer a region of "forty acres and a mule" and of "gangs" of Negro choppers and pickers. We would, quite literally, have really contributed to stupidity had we drawn such a picture. I can only suggest, then, that Professor Henry get out of the library and visit several leading cotton counties. He might find the use of pre-emergent herbicides, flame cultivators, defoliators, mechanical harvesters--and the general absence of Negroes from the cotton fields--enlightening.

Social Groups and Their Languages

Nancy Modiano
New York University

Since the Tri-University Project is involved with change in education much of the New Orleans Conference was devoted to some aspect of change. We began by looking at some of the dynamics of societal change; the complexities almost overwhelmed us at times. Discussion Group Six started to examine some of the profound effects of emotions upon change. We began to face some of the discrepancies between the rhetoric of most social studies programs and the realities of history and our present postures in international and domestic policies; we questioned whether we should isolate children from the seamier realities of life or treat them like capable, thinking members of our society. This discussion reaffirmed for many of us our faith in a dominant belief and basic structure of our culture; many of us stated the freedom we felt, while attending a federally sponsored conference, to criticize some specific acts of our government, whether local or federal.

Change involves more than broad social forces; individuals react upon one another. To the extent that teachers see their classroom activities through the eyes of their students, whether in elementary school or in college, their efforts may be effective. A teacher's objective for a particular lesson is only somewhat related to what a particular student may learn during that lesson. For curriculum evaluation we must shift our emphasis from teacher objectives to what children actually learn; what they learn is far more than a body of facts, far more than a catalogue of "how the thing is."

As we began to look more deeply into the way children learn, we began to recognize more fully the extent of individual differences, whether they arise from the uniqueness of each person's genetic inheritance combined with his experiences, or from culturally influenced commonalities of experience. Call them concepts or beliefs, each individual's view of the world, his system of symbols, and the way he uses his language, differ.

What effect does his language have upon his view of the world and upon the way he thinks? Much of the work on language and thought which was quite popular as recently as one or two years ago was based upon the assumption of a causal relationship between mastery of Standard American and the ability to think, upon the assumption of a causal relationship between a lack of Standard American and the inability to think abstractly. Let us compare this with some of the work of people as diverse as the linguists Sapir, Whorf, and Swadesh, and psychologists such as Furth, Vygotsky, and, of course, Piaget:

With young children a thought tends to proceed its verbal representation. Many of us have had the experience of asking a child why he grouped a series of objects in a certain way only to have him pull back, regroup them on a more primitive level, and then tell us what he did in the second grouping; his level of thinking clearly outdistanced his ability to verbalize.

As children grow to the operational level of thinking they become more and more dependent upon the manipulation of symbols. Symbols as such are egocentric; while they may have commonly agreed upon meanings among certain people, the individual manipulating them assigns them his own private meanings based upon his own experiences and perceptions. There is no evidence that symbols need be couched in Standard American or in the dialect of any other highly industrialized society. Furth has shown quite clearly that deaf-mute children develop the same intellectual structures as hearing youngsters; what they lack is the informational background only verbal communication can give.

We are faced with a common situation in which our lowest-class youngsters tend to do poorly in academic studies and also tend to show a preference for concrete rather than abstract formal operational thought. In addition, their language tends to resemble a folk language with fewer elements than are found in our complex dialects. But is there a causal relationship between a preference for concreteness and folk language?

When we compare some of our lowest-income groups with the model of small societies suggested by Fred Gearing, we see that in many ways they have an essentially folk orientation toward life and toward thinking. I believe that it is only after the second or third generation of trying to "make it" in urban-industrialized centers that they both see the necessity and gain the skills for the generalized abstract manipulations necessary for success in our industrialized society. Whenever they do see this necessity their language does not hold them back from abstracting and generalizing at the highest of levels. Of course, the use of inappropriate speech forms may hurt them at job interviews or when dealing with some of our public institutions such as schools, hospitals, the police, or "the welfare."

For abstract formal operations we need to be able to manipulate symbols; words are only one such type of symbol. Moreover, whenever new language is needed for the generation of new symbols or for communication, it can be shaped. We tend to forget the maleability of language. Where would ours be today if we had not been able to modify the simple English of several hundred years ago?

Many of our difficulties with culturally different youngsters today lie in our lack of common intellectual needs and in the lack of flexibility on our part, not in a lack of thinking or Standard American on theirs.

Language and the Recruitment of Teachers: Implications of the Papers by Duckworth, Britton, and Henry For Recruitment and Preparation of Elementary Teachers

Richard L. Larson
University of Hawaii

The proposals about elementary teaching implied in the papers by Eleanor Duckworth, James Britton, and Jules Henry would require teachers to have abilities not always found among those who decide to enter the teaching profession today, and not easily developed during our teacher preparation programs. In asking teachers to help children develop the four kinds of beliefs that she enumerates, for example, Miss Duckworth would apparently expect teachers to know enough about how children develop and confirm beliefs so that they can plan their teaching activities wisely, and to be perceptive enough to see how well the children are developing those beliefs. Miss Duckworth's proposals thus demand of the teacher a good deal of critical discrimination about teaching activities -- discrimination that will enable her to set teaching objectives appropriate for each class and to recognize which parts of our new curricula will encourage the desired beliefs. Furthermore, the teacher will need to recognize which beliefs a particular lesson will not support. Finally, the teacher will need sufficient flexibility of mind to be able to change her teaching program immediately if she sees that it is not encouraging the beliefs it seeks, or is encouraging unexpected beliefs that need to be reinforced or modified. (This interpretation assumes, of course, that it is the teacher's business to decide what beliefs a child should develop). In part the teacher will rely on observation of the children's actions to guide her, but in part, she needs to be sensitive to their language -- to what they say and write.

Mr. Britton's paper calls for the same kind of sensitivity, firmly supported by knowledge about the workings of language as well as about how children use language. In order to carry on that kind of instruction Mr. Britton recommends, a teacher will need first to know a good deal about how language functions: how it represents or symbolizes the reality we see, how it helps us to control the world we are living in, how it supports (and also, presumably, can impede) learning, and how it helps us to shape and classify our experiences. In short, the teacher needs to understand the psychology, perhaps the sociology, of language. More important, she must understand how children use language: exactly how they move from "improvisations" (as I think Mr. Britton called children's first attempts to use language) to "narratives" (also Mr. Britton's term) of things that happened to statements in which they "plan" what they will do. She needs to know how to stimulate children to talk and write willingly about their experiences and their wishes, if we are to accept Mr. Britton's implication that using language eagerly and freely is a fundamental activity in children's learning about their world. Perhaps most important of all, the teacher needs the sensitivity to recognize what the language used by her students in speaking and writing reveals, and how best to respond to what she hears. Mr. Britton's warning that a teacher may fail to discriminate between a child's use of language to express feelings or enjoy experiences, on the one hand, and to inform his hearers (i.e., to "participate" in a social activity), on the other hand, suggests the kind of power a teacher must have to recognize what children are doing with their language. If she misinterprets what she is hearing, she risks discouraging the student from using language in the way he enjoys, and, Mr. Britton implies, she may reduce his willingness to explore his world and reveal his feelings through language. For Mr. Britton as for Miss Duckworth, then, a keen ear for children's language and the power to recognize what language reveals about children's beliefs and growth are essential qualifications for a successful teacher.

Although Professor Henry's paper was mainly a criticism of current textbooks, his criticisms, too, imply a need for teachers who are keen observers of the uses of language. One corrective for biased reporting, specious causal relations, and half-truths in textbooks is the teacher who can recognize the biases of authors by their choice of language, can see where causal relations are unfairly implied, and can point out to students what the book says and what it fails to consider. When authors of texts try to escape facing uncomfortable truths about history or society by writing high-level abstractions or generalizations, the alert teacher can recognize what is happening and offset it, perhaps, by encouraging children to inquiries that will help them test, and perhaps reject, the misleading generalizations. Miss Duckworth's and Mr. Britton's ideal teacher would surely be a good listener and a good observer of language; Professor Henry's ideal teacher would be a keen and discriminating reader.

If these qualifications are as vital as they appear from the three papers, the implications for programs to prepare elementary teachers are substantial. Prospective teachers need to learn about the uses of different classroom activities (what activities may help to implant or strengthen which beliefs) -- information that courses in most teacher-training programs presumably impart now. They need also to know more than many of them are now learning about the role that language plays in human culture and human development; they need to study, not just how children develop the power to use language, but what role the different uses of language play in the child's world and even in the adult world that the child inevitably lives in. Formal instruction in the psychology and sociology of language, perhaps even in the philosophy of language (the relations between language and reality, the ways in which language facilitates and controls knowing) -- not to mention semantics -- may be much more essential in our teacher-training program than we have thought. And beyond formal classroom instruction, carried out through readings, discussion, experiments, must surely come extended opportunities to observe language in action: to see and participate in classroom work with students, under the eye of an experienced teacher, so that she can develop the discriminating ear she will need if she is to guide the language activities of her children productively rather than, unknowingly, to inhibit them. Miss Duckworth's and Mr. Britton's papers evidently support bringing prospective teachers into the classroom early and often during their training.

But can the kinds of perceptivity and the skill in responding that the papers call for be trained into a prospective teacher who is not temperamentally or intellectually suited for such training? Although the conference did not touch the question, the papers force us to ask whether we do not have to improve our efforts to recruit talented people for elementary teaching -- people with the temperament and the latent sensitivity about language that will make possible the success of their professional training. Without trying to stereotype those who choose elementary teaching as a career, one can guess that many who enter the profession today look upon it as a secure, intellectually undemanding occupation that permits them to fulfill a vaguely sentimental desire to "work with children." There may be nothing wrong with these motives, but they do not assure that we will have the best possible elementary teaching. Even though we are told that an increasing number of people are going into teaching careers, there has not been much effort (at least in Hawaii, that I have seen) to identify and attract into elementary teaching the kind of person who is sensitive to spoken and written language as it expresses, often subtly, the users' feelings and attitudes. But the papers by Miss Duckworth, Mr. Britton and Professor Henry seem almost to require that we try to bring such people into the profession.

It seems clear, therefore, that we need to devote more thought than we have in the past to ways of locating the kind of people needed in the profession. One method might be to encourage the staffs of lower-division courses (especially of our composition and literature courses), even our high school teachers, to identify students who show unusual powers of observation and sensitivity to language, and encourage these people to consider the opportunities and demands of a career in teaching.

But these people will be able, if they choose, to achieve rewarding careers in other professions, too. If we can lead them to decide upon a career in elementary teaching and to train for it, we need also to hold their interest. This means that our programs for preparing elementary teachers will have to earn the respect of those who enter them, just as the programs to prepare members of other professions must do. Our programs for preparing teachers cannot be allowed to become stale and pedestrian rehearsals of old methodologies; they will have to be inventive and stimulating -- to impart reliable knowledge about human language and human development while training participants to observe sensitively and respond wisely. Our preparation programs, that is, will have to be of high professional quality themselves. Since the program required of those preparing for a profession is an important source of the "image" of the profession in the minds of young people, our teacher-training programs will have increasingly to demonstrate that teaching deserves the attention of talented young persons who are choosing a profession.

Postscript on Change

Robert Ince
University of Illinois

My own major responses to the conference were two. First, I was a bit disturbed by what I consider to be an over-emphasis on the term "change" in the speeches and the discussions. The force of most of what we heard seemed to put forth the notion that change for its own sake is good. No one advanced that proposition in so bald a form, but there was a considerable emphasis on the notion that what we "need now" are new and imaginative programs to solve society's problems. I would argue that this kind of emphasis eventually leads one to a pragmatic approach to education which will destroy any kind of consistency in the development of the social order and which will also destroy the possibility of any kind of planned, orderly *system* for changing things. I would argue that the pragmatic approach to education is basically anti-humanistic. It may solve certain present problems; it does not take into account the consequences of change for future societies.

My other response to the conference had to do with the university's potential to solve social problems. I feel strongly that the universities in this country are not designed or equipped to solve social problems except in a most tangential way. The academic freedom of our universities carries with it the limitation that no one person or group of people in the university can tell any other person, or any other group, what problems must be solved. We must use persuasion, information campaigns and so on to try to get problems solved as best we can. But, there is no guarantee they will be solved. Although individually people who attend such conferences as the one in New Orleans may see the tremendous need to get the universities and the public schools closer together, they will do it only through the demonstration of that need to those who have the potential for solving some of public education's problems.